AIWA

CX-LAP1MK3

MODEL

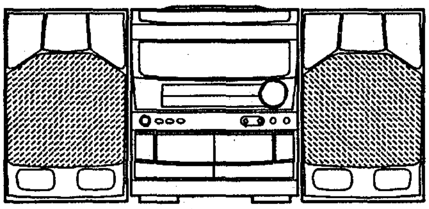
SERVICE MANUAL

495

aiwa

aiwa SERVICE

CX-NV800
CX-NV820
CX-NAP1MK3



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 2ZM-3MK2 PR4N
- BASIC CD MECHANISM : 4ZG-1 ADNM
- TYPE: 800:V
  820,NAP1MK3:EZ

SERVICE MANUAL

CD-CASSEIVER	SPEAKER	REMOTE CONTROLLER
CX–NV800 (TYPE: V)	SX–FNV800	RC–T501
CX–NV820 (TYPE: EZ)		
CX–NAP1MK3 (TYPE: EZ)		

- **If requiring information about the CD mechanism, see Service Manual of 4ZG-1, S/M Code No.09-965-128-10T**

495

S/M Code No. 09–968–147–3FE

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SPECIFICATIONS

<FM Tuner section>

Tuning range	EZ : 87.5 MHz to 108 MHz V : FM1 (OIRT) 65 MHz to 74 MHz (10kHz step) FM (CCIR) 87.5 MHz to 108 MHz (50 kHz step)
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<AM (MW) Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<LW Tuner section> <EZ, V only>

Tuning range	144 kHz ~ 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output *	50 W + 50 W EZ : (6 ohms, T.H.D. 1%, 1 kHz/DIN 45500) V : (6 ohms, T.H.D. 1%, 1 kHz) Reference : 70 W + 70 W EZ : (6 ohms, T.H.D. 10%, 1 kHz/DIN 45324) V : (6 ohms, T.H.D. 10%, 1 kHz) DIN MUSIC POWER : 100 W +100 W (EZ only)

* (without connecting to the SURROUND SPEAKERS)

Total harmonic distortion	0.1% (25 W, 1 kHz, 6 ohms, DIN AUDIO)
Inputs	VIDEO/AUX : 820EZ : 150 mV (adjustable) NAP1MK3EZ : 230 mV (adjustable) V : 250 mV (adjustable) MIC 1, MIC 2 : 820EZ, V : 1 mV (10 kohms) NAP1MK3EZ : 1.7 mV (10 kohms)
Outputs	SUPER WOOFER : 1.7 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS : accept speakers of 16 ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	CrO_2 tape : 50 Hz – 16000 Hz Normal tape : 50 Hz –15000 Hz
Signal-to-noise ratio	60 dB (Dolby B NR ON, CrO_2 tape peak level)
Recording system	AC bias
Heads	Deck 1 : Playback head x1 Deck 2 : Recording/playback/erase head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	83 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX-FNV800>

Cabinet type	3 way, bass reflex with surround speaker (magnetic sealed type)
Speakers	Woofer : 140 mm ($5\frac{5}{8}$ in.) cone type Tweeter : 80 mm ($3\frac{1}{4}$ in.) cone type Super tweeter : 20 mm ($\frac{13}{16}$ in.) ceramic type Surround speaker : 80 mm ($3\frac{1}{4}$ in.) cone type
Impedance	Front speaker : 6 ohms Surround speaker : 16 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	235 x 302 x 270 mm ($9\frac{3}{8}$ x 12 x $10\frac{3}{4}$ in.)
Weight	3.8 kg (8 lbs 6 oz.)

<General>

Power requirements	230 V AC, 50 Hz
Power consumption	330 W
Dimensions of main unit (W x H x D)	260 x 307 x 345 mm ($10\frac{1}{4}$ x $12\frac{1}{8}$ x $13\frac{5}{8}$ in.)
Weight of main unit	8.0 kg (17 lbs 10 oz.)

- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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- The word "BBE" and the "BBE symbol" are trademarks of BBE Sound, Inc.
  Under license from BBE Sound, Inc.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!
Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!
Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!
Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

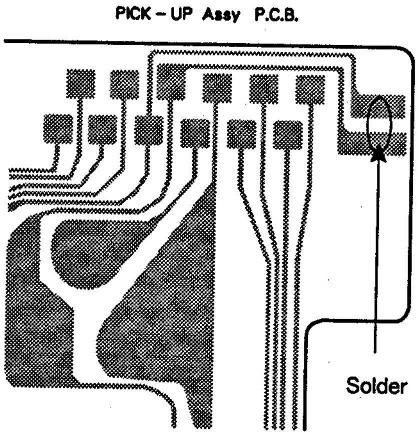
CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

Precaution to replace Optical block

(KSS – 213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in figure below.



ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	S6-804-060-030		IC,LB9051A
	86-NF5-601-010		C-IC,LC866432V-5A45<V>
	86-NF5-690-010		C-IC,LC866448W-5B86<NAP1MK3,820EZ>
	87-070-083-019		IC,GP1U281X
	87-A20-060-019		IC,STK-419-110
	87-070-121-010		IC,HA12185NT
	87-070-232-019		IC,BA3834S
	87-017-915-089		IC,BU4094BCF
	87-001-874-019		IC,HA12134A
	87-A20-107-019		IC,BA3836
	87-017-804-019		IC,BU4052BC
	87-A20-056-019		IC,BA3880S
	87-017-914-019		IC,BU4094 BC
	87-017-888-089		IC,NJM4558MD
	87-070-184-040		IC,M65846FP-600D
	87-A20-069-049		C-IC,BA3842F
	87-070-127-119		IC,LC72131
	87-017-714-119		IC,LA1836
	87-A20-105-049		IC,BU1921FS<NAP1MK3,820EZ>
	87-001-792-089		IC,NJM2100M<NAP1MK3,820EZ>
TRANSISTOR			
	87-026-463-089		TR,2SA933S(RS)
	89-213-702-019		TR,2SB1370E
	89-113-187-089		TR,2SA1318TU
	87-026-610-089		TR,KTC3198GR
	89-332-665-089		TR,2SC3266GR
	89-327-126-089		C-TR,2SC2712BL
	89-337-221-389		C-TR,2SC3722K
	89-327-125-088		C-TR,2SC2712GR
	89-111-625-089		C-TR,2SA1162GR
	87-026-210-089		C-TR,DTC144EK T147
	87-026-211-089		C-TR,DTA144EK T147
	89-333-266-089		C-TR,2SC3326B
	87-026-609-089		TR, KTA1266GR
	89-109-705-089		TR,2SA970GR
	89-026-210-088		C-TR,DTC144EK
	87-026-226-089		C-TR,DTA143EK
	89-502-466-089		TR FET 2SK246-BL (TPE2)
	87-026-228-089		C-TR,DTA124EK
	89-112-965-089		TR,2SA1296GR
	89-333-317-089		TR,2SC3331T
	89-109-521-089		TR,2SA952K
	89-406-555-089		TR,2SD655E
	87-026-238-089		C-TR,DTC144WK
	87-026-214-089		TR,DTA114YS
	89-327-143-089		C-TR,2SC2714 (O)
	87-026-269-089		TR,DTA114ES
	89-421-141-289		C-TR,2SD2114K,UV
	89-505-434-589		C-FET,2SK543(4/5)
DIODE			
	87-A40-116-069		DIODE,RS403L-B-D-51
	87-A40-115-069		DIODE,RS603M
	87-070-274-089		DIODE,1N4003 SEM
	87-020-027-089		C-DIODE,1SS184
	87-020-125-089		C-DIODE,1SS181
	87-017-437-089		DIODE,1N4148M
	87-017-174-089		ZENER,HZS11A3L
	87-017-147-089		ZENER,HZS33-2
	87-017-978-089		DIODE,1N4003
	87-A40-134-089		DIODE,G2B
	87-A40-184-090		DIODE,RK34
	87-A40-199-089		ZENER,UZL6H2
	87-A40-202-089		ZENER,UZ5.1B SB
	87-A40-200-089		ZENER,UZL11L3
	87-020-331-089		C-DIODE,DAN202K
	87-017-123-089		ZENER,HZS11A3L
	87-020-330-089		C-DIODE,DAP202K
	87-017-148-089		ZENER,HZS6A1L
	87-001-559-089		DIODE,1SS131
	87-A40-211-089		ZENER,UZ36BSA
	87-A40-197-089		ZENER,UZL6L1
	87-A40-198-089		ZENER,UZL6M1
	87-020-465-089		DIODE,1SS133
	87-A40-207-089		ZENER,UZ11BSC
MAIN C.B			
C101	87-016-474-099		CAP,E 3300-50
C102	87-016-474-099		CAP,E 3300-50
C104	87-010-235-089		CAP,E 470-16 SME
C105	87-010-235-089		CAP,E 470-16 SME
C106	87-010-409-089		CAP,E 220-50 SME
C107	87-010-247-089		CAP,E 100-50 SME
C108	87-010-247-089		CAP,E 100-50 SME
C109	87-010-263-089		CAP,E 100-10 SME 5X11
C112	87-010-382-089		CAP,E 22-25 SME
C113	87-010-403-089		CAP,E 3.3-50 SME
C116	87-012-140-089		C-CAP,S 470P-50 CH
C121	87-010-196-089		C-CAP,S 0.1-25 F
C122	87-010-196-089		C-CAP,S 0.1-25 F
C123	87-018-209-089		CAP,TC-U 0.1-50 F
C124	87-010-196-089		C-CAP,S 0.1-25 F
C145	87-010-186-089		C-CAP,4700P-50B
C146	87-010-186-089		C-CAP,4700P-50B
C152	87-010-260-089		CAP,E 47-25 SME
C171	87-016-565-099		CAP,E 4700-25(JAM1)
C172	87-016-565-099		CAP,E 4700-25(JAM1)
C173	87-010-196-089		C-CAP,S 0.1-25 F
C174	87-010-196-089		C-CAP,S 0.1-25 F
C175	87-010-196-089		C-CAP,S 0.1-25 F
C176	87-015-785-089		C-CAP,0.1-25 F
C220	87-010-194-089		C-CAP,S 0.047-25 F
C221	87-010-544-089		CAP,E 0.1-50 SME
C222	87-010-544-089		CAP,E 0.1-50 SME
C223	87-010-187-089		C-CAP,S 5600P-50 B
C224	87-010-187-089		C-CAP,S 5600P-50 B
C225	87-012-179-089		C-CAP,S 1200P-50 B
C226	87-012-179-089		C-CAP,S 1200P-50 B
C227	87-010-405-089		CAP,E 10-50 SME
C228	87-010-405-089		CAP,E 10-50 SME
C229	87-010-402-089		CAP,E 2.2-50 SME
C230	87-010-402-089		CAP,E 2.2-50 SME
C231	87-010-147-089		C-CAP,S 3P-50 CH
C232	87-018-098-089		CAP,TC-U 3.3P-50 SL
C233	87-010-196-089		C-CAP,S 0.1-25 F
C234	87-010-196-089		C-CAP,S 0.1-25 F
C235	87-010-196-089		C-CAP,S 0.1-25 F
C236	87-010-196-089		C-CAP,S 0.1-25 F
C239	87-018-134-089		CAP,TC-U 100P-50B
C240	87-018-134-089		CAP,TC-U 100P-50B
C241	87-010-197-089		C-CAP,S 0.01-25 B<NAP1MK3,820EZ>
C242	87-010-197-089		C-CAP,S 0.01-25 B<NAP1MK3,820EZ>
C243	87-010-318-089		C-CAP,S 47P-50CH<V>
C243	87-010-322-089		C-CAP,S100P-50CH<NAP1MK3,820EZ>
C244	87-010-318-089		C-CAP,S 47P-50CH<V>
C244	87-010-322-089		C-CAP,S100P-50CH<NAP1MK3,820EZ>
C249	87-018-209-089		CAP,TC-U 0.1-50 F
C250	87-A10-200-010		CAP,E 10-100 PP
C255	87-010-178-089		C-CAP,S 1000P-50 B
C256	87-010-178-089		C-CAP,S 1000P-50 B<V>
C260	87-015-785-089		C-CAP,0.1-25 F
C301	87-010-318-089		C-CAP,S 47P-50 CH
C302	87-010-318-089		C-CAP,S 47P-50 CH

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C303	87-012-157-089		C-CAP,S 330P-50 CH
C304	87-012-157-089		C-CAP,S 330P-50 CH
C305	87-012-145-089		C-CAP,S 270P-50 CH
C306	87-012-145-089		C-CAP,S 270P-50 CH
C307	87-010-196-089		C-CAP,S 0.1-25 F
C311	87-010-198-089		C-CAP,S 0.022-25 B
C312	87-010-198-089		C-CAP,S 0.022-25 B
C313	87-010-182-089		C-CAP,S 2200P-50 B
C314	87-010-182-089		C-CAP,S 2200P-50 B
C315	87-010-180-089		C-CAP,S 1500P-50 B
C316	87-010-180-089		C-CAP,S 1500P-50 B
C317	87-012-142-089		C-CAP,S 0.33-16 F
C318	87-012-142-089		C-CAP,S 0.33-16 F
C319	87-012-141-089		C-CAP,S 0.22-16 F
C320	87-012-141-089		C-CAP,S 0.22-16 F
C321	87-010-196-089		C-CAP,S 0.1-25 F
C322	87-010-196-089		C-CAP,S 0.1-25 F
C324	87-010-260-089		CAP,E 47-25 SME
C325	87-010-370-089		CAP,E 330-6.3 SME
C326	87-010-196-089		C-CAP,S 0.1-25 F
C330	87-010-401-089		CAP,E 1-50 SME
C332	87-015-785-089		C-CAP,0.1-25 F
C335	87-010-805-089		C-CAP,S 1-16F
C336	87-010-805-089		C-CAP,S 1-16F
C337	87-010-196-089		C-CAP,S 0.1-25 F
C338	87-010-196-089		C-CAP,S 0.1-25 F
C339	87-010-196-089		C-CAP,S 0.1-25 F
C340	87-015-785-089		C-CAP,0.1-25 F
C351	87-012-154-089		C-CAP,S 150P-50 CH
C352	87-012-154-089		C-CAP,S 150P-50 CH
C451	87-012-140-089		C-CAP,S 470P-50 CH
C452	87-012-140-089		C-CAP,S 470P-50 CH
C453	87-010-178-089		C-CAP,S 1000P-50 B
C454	87-010-175-089		C-CAP,560P-50SL
C455	87-010-178-089		C-CAP,S 1000P-50 B
C456	87-010-408-089		CAP,E 47-50 SME
C457	87-010-197-089		C-CAP,S 0.01-25 B
C458	87-010-183-089		C-CAP,S 2700P-50 B
C459	87-010-183-089		C-CAP,S 2700P-50 B
C460	87-010-183-089		C-CAP,S 2700P-50 B
C470	87-010-196-089		C-CAP,S 0.1-25 F
C501	87-010-179-089		C-CAP,S 1200P-50 B
C502	87-010-179-089		C-CAP,S 1200P-50 B
C503	87-012-155-089		C-CAP,S 180P-50 CH
C504	87-012-155-089		C-CAP,S 180P-50 CH
C515	87-010-545-089		CAP,E 0.22-50 SME
C516	87-010-545-089		CAP,E 0.22-50 SME
C519	87-015-785-089		C-CAP,0.1-25 F
C521	87-010-196-089		C-CAP,S 0.1-25 F
C522	87-010-318-089		C-CAP,S 47P-50 CH
C523	87-010-197-089		C-CAP,S 0.01-25 B
C524	87-010-402-089		CAP,E 2.2-50 SME
C525	87-010-184-089		C-CAP,S 3300P-50 B
C526	87-010-196-089		C-CAP,S 0.1-25 F
C527	87-010-401-089		CAP,E 1-50 SME
C528	87-010-401-089		CAP,E 1-50 SME
C529	87-010-384-089		CAP,E 100-25 SME
C530	87-010-197-089		C-CAP,S 0.01-25 B
C531	87-010-183-089		C-CAP,S 2700P-50 B
C532	87-010-194-089		C-CAP,S 0.047-25 F
C533	87-010-196-089		C-CAP,S 0.1-25 F
C534	87-010-263-089		CAP,E 100-10 SME 5X11
C535	87-010-401-089		CAP,E 1-50 SME
C536	87-010-401-089		CAP,E 1-50 SME
C537	87-010-545-089		CAP,E 0.22-50 SME
C540	87-010-196-089		C-CAP,S 0.1-25 F
C541	87-010-196-089		C-CAP,S 0.1-25 F
C542	87-010-405-089		CAP,E 10-50 SME
C543	87-010-546-089		CAP,E 0.33-50 SME
C544	87-010-546-089		CAP,E 0.33-50 SME

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C545	87-010-400-089		CAP,E 0.47-50 SME
C546	87-010-400-089		CAP,E 0.47-50 SME
C547	87-015-632-089		C-CAP,0.015-50 BK
C548	87-015-632-089		C-CAP,0.015-50 BK
C553	87-015-627-089		C-CAP,1000P-50 B
C554	87-015-627-089		C-CAP,1000P-50 B
C557	87-010-178-089		C-CAP,S 1000P-50 B
C558	87-010-178-089		C-CAP,S 1000P-50 B
C601	87-010-178-089		C-CAP,S 1000P-50 B
C602	87-010-178-089		C-CAP,S 1000P-50 B
C603	87-010-405-089		CAP,E 10-50 SME
C604	87-010-405-089		CAP,E 10-50 SME
C605	87-010-260-089		CAP,E 47-25 SME
C606	87-010-101-089		CAP,E 220-16 SME
C607	87-010-188-089		C-CAP,S 6800P-50 B
C608	87-010-188-089		C-CAP,S 6800P-50 B
C609	87-018-127-089		CAP,TC-U 470P-50 B
C610	87-018-127-089		CAP,TC-U 470P-50 B
C611	87-010-197-089		C-CAP,S 0.01-25 B
C612	87-010-197-089		C-CAP,S 0.01-25 B
C613	87-010-195-089		C-CAP,S 0.068-25 F
C614	87-010-195-089		C-CAP,S 0.068-25 F
C615	87-010-404-089		CAP,E 4.7-50 SME
C616	87-010-404-089		CAP,E 4.7-50 SME
C617	87-010-404-089		CAP,E 4.7-50 SME
C618	87-010-404-089		CAP,E 4.7-50 SME
C641	87-010-196-089		C-CAP,S 0.1-25 F
C642	87-010-196-089		C-CAP,S 0.1-25 F
C673	87-010-316-089		C-CAP,S 33P-50CH<NAP1MK3,820EZ>
C674	87-010-316-089		C-CAP,S 33P-50CH<NAP1MK3,820EZ>
C675	87-010-318-089		C-CAP,S 47P-50CH<NAP1MK3,820EZ>
C676	87-010-318-089		C-CAP,S 47P-50CH<NAP1MK3,820EZ>
C701	87-010-381-089		CAP,E 330-16 SME
C702	87-010-404-089		CAP,E 4.7-50 SME
C703	87-010-197-089		C-CAP,S 0.01-25 B
C704	87-010-197-089		C-CAP,S 0.01-25 B
C711	87-010-263-089		CAP,E 100-10 SME 5X11
C712	87-010-196-089		C-CAP,S 0.1-25 F
C722	87-010-152-089		C-CAP,S 8P-50 CH
C723	87-010-178-089		C-CAP,S 1000P-50 B
C725	87-010-178-089		C-CAP,S 1000P-50 B
C727	87-010-196-089		C-CAP,S 0.1-25 F
C728	87-010-248-089		CAP,E 220-10 SME
C735	87-018-134-089		CAP,TC-U 0.01-16 Y
C770	87-010-405-089		CAP,E 10-50 SME
C771	87-010-405-089		CAP,E 10-50 SME
C772	87-010-194-089		C-CAP,S 0.047-25 F
C773	87-010-196-089		C-CAP,S 0.1-25 F
C774	87-010-263-089		CAP,E 100-10 SME 5X11
C775	87-010-405-089		CAP,E 10-50 SME
C776	87-010-197-089		C-CAP,S 0.01-25 B
C777	87-010-400-089		CAP,E 0.47-50 SME
C778	87-010-401-089		CAP,E 1-50 SME
C779	87-010-401-089		CAP,E 1-50 SME
C780	87-010-197-089		C-CAP,S 0.01-25 B
C781	87-010-405-089		CAP,E 10-50 SME
C782	87-010-405-089		CAP,E 10-50 SME
C785	87-010-197-089		C-CAP,S 0.01-25 B
C786	87-010-197-089		C-CAP,S 0.01-25 B
C787	87-010-184-089		C-CAP,S 3300P-50 B
C788	87-010-184-089		C-CAP,S 3300P-50 B
C789	87-010-179-089		C-CAP,S 1200P-50 B K
C790	87-010-179-089		C-CAP,S 1200P-50 B
C791	87-010-401-089		CAP,E 1-50 SME
C792	87-010-182-089		C-CAP,S 2200P-50 B
C793	87-010-189-089		C-CAP,S 8200P-50 B
C794	87-010-408-089		CAP,E 47-50 SME
C795	87-010-194-089		C-CAP,S 0.047-25 F
C796	87-010-403-089		CAP,E 3.3-50 SME
C802	87-010-197-089		C-CAP,S 0.01-25 B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C803	87-018-134-089		CAP,TC-U 0.01-16 Y
C814	87-010-196-089		C-CAP,S 0.1-25 F
C815	87-018-134-089		CAP,TC-U 0.01-16 Y<V>
C817	87-010-197-089		C-CAP,S 0.01-25 B
C818	87-010-197-089		C-CAP,S 0.01-25 B
C819	87-010-197-089		C-CAP,S 0.01-25 B
C820	87-010-408-089		CAP,E 47-50 SME
C821	87-010-197-089		C-CAP,S 0.01-25 B
C823	87-010-197-089		C-CAP,S 0.01-25 B
C828	87-010-197-089		C-CAP,S 0.01-25 B
C829	87-010-197-089		C-CAP,S 0.01-25 B
C830	87-015-819-089		CHIP CAP 0.01
C835	87-010-197-089		C-CAP,S 0.01-25 B
C860	87-010-248-089		CAP,E 220-50 SME<NAP1MK3,820EZ>
C861	87-010-196-089		C-CAP,S 0.1-25 F<NAP1MK3,820EZ>
C862	87-010-182-089		C-CAP,S 2200P-50 B<NAP1MK3,820EZ>
C863	87-010-178-089		C-CAP,S 1000P-50 B<NAP1MK3,820EZ>
C864	87-010-315-089		C-CAP,S 27P-50 CH<NAP1MK3,820EZ>
C865	87-010-315-089		C-CAP,S 27P-50 CH<NAP1MK3,820EZ>
C866	87-010-197-089		C-CAP,S 0.01-25 B<NAP1MK3,820EZ>
C867	87-010-318-089		C-CAP,S 47P-50 CH<NAP1MK3,820EZ>
C868	87-010-405-089		CAP,E 10-50 SME<NAP1MK3,820EZ>
C869	87-010-196-089		C-CAP,S 0.1-25 F<NAP1MK3,820EZ>
C871	87-010-805-089		C-CAP,S 1-16 F<NAP1MK3,820EZ>
C872	87-010-197-089		C-CAP,S 0.01-25 B<NAP1MK3,820EZ>
C901	87-010-197-089		C-CAP,S 0.01-25 B
C902	87-010-196-089		C-CAP,S 0.1-25 F
C903	87-010-119-089		CAP,TC-U 100P-50 B
C942	87-010-154-089		C-CAP,S 10P-50 CH
C946	87-010-401-089		CAP,E 1-50 SME
C952	87-010-197-089		C-CAP,S 0.01-25 B
C957	87-010-315-089		C-CAP,S 27P-50 CH
C958	87-010-197-089		C-CAP,S 0.01-25 B
C960	87-010-196-089		C-CAP,S 0.1-25 F
C961	87-010-150-089		C-CAP,S 6P-50 CH
C987	87-018-134-089		CAP,TC-U 0.01-16 Y
C990	87-010-197-089		C-CAP,S 0.01-25 B
C993	87-018-134-089		CAP,TC-U 0.01-16 Y
C995	87-010-197-089		C-CAP,S 0.01-25 B
C999	87-010-196-089		C-CAP,S 0.1-25 F
CF801	87-008-423-019		CF,SFE10.7MS3G-A
CF802	82-785-747-019		CF,MS2GHY,R
FR121	87-029-060-089		RES,FUSE 33-1/4W J
FR122	87-029-060-089		RES,FUSE 33-1/4W J
J252	87-A60-024-019		JACK 6.3BLK W/S WKM
J253	87-099-802-019		JACK,PIN 3P BRW
J254	87-033-240-019		TERMINAL,SP 4P32SV1-05
J652	87-099-741-019		JACK,PIN 2P (JT)
J801	87-033-241-019		TERMINAL,ANT AJ2039<NAP1MK3,820EZ>
J801	87-033-239-019		TERMINAL,HSP-154-2<V>
L101	87-003-383-019		COIL,1UH-S
L102	87-003-383-019		COIL,1UH-S
L403	87-007-341-019		COIL,TRAP 85K
L404	87-007-341-019		COIL,TRAP 85K
L451	87-007-342-019		COIL,OSC 85K BIAS
L701	87-A50-027-019		COIL,1 POLE MPX(TOK)
L702	87-A50-027-019		COIL,1 POLE MPX(TOK)
L721	87-A50-015-019		COIL,FM DET(TOK)
L742	87-A90-051-019		FLTR,CFAZ-450(TOK)
L743	87-005-564-089		C-COIL,2.2UH<NAP1MK3,820EZ>
L770	87-003-102-089		COIL,10UH
L832	87-005-847-089		COIL,2.2UH(CECS)
L850	87-005-847-089		COIL,2.2UH(CECS)<NAP1MK3,820EZ>
L941	87-A50-020-019		COIL,ANT LW
L942	87-A50-019-019		COIL,OSC LW
L981	86-NF4-665-019		AM PACK 1(TOK)
⚠PR110	87-026-681-089		PROTECTOR,5A 60V 491
⚠PR111	87-026-681-089		PROTECTOR,5A 60V 491
⚠PR112	87-026-689-089		PROTECTOR,1A 60V 491
R105	87-022-600-089		RES,M/F 0.1-2W J

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
R106	87-022-600-089		RES,M/F 0.1-2W J
RY101	87-045-361-019		RELAY,DH12D2-OS(M)-2<V>
RY101	87-A90-143-019		RELAY,DG12D2-OS(M)<NAP1MK3,820EZ>
RY102	87-045-382-019		RELAY,OUAZ-SH-112L
SFR301	87-024-174-089		SFR33K DIA6 V
SFR302	87-024-174-089		SFR33K DIA6 V
SFR303	87-024-174-089		SFR33K DIA6 V
SFR304	87-024-174-089		SFR33K DIA6 V
SFR305	87-024-175-089		SFR,47K DIA6 V
SFR306	87-024-175-089		SFR,47K DIA6 V
SFR451	87-024-175-089		SFR,47K DIA6 V
SFR452	87-024-175-089		SFR,47K DIA6 V
SFR722	87-024-171-089		SFR 4.7K DIA6 V
TC701	87-011-253-089		TRIMER,30P LAR
TC942	87-011-253-089		TRIMER,30P LAR
TH241	87-A90-157-089		C-THMS,4.7K
VR651	82-NF5-660-019		VR 50K BX2 RK14K 12A
W101	85-NF5-628-019		F-CABLE 7P-2.5
W301	86-NF5-618-019		CONN ASSY,8P RPB
W604	85-NF5-617-019		CABLE,FFC 6P-1.25
X703	84-508-618-019		VIB,CER CSB 456 F/5
X721	87-030-372-019		VIB,XTAL 7.2MHZ
X850	89-KT1-608-019		VIB,XTAL 4.332MHZ<NAP1MK3,820EZ>

FRONT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C201	87-015-698-049		CAP,E 4.7-50 7L
C202	87-015-698-049		CAP,E 4.7-50 7L
C203	87-010-392-049		CAP,E 33-35 SME
C204	87-010-401-049		CAP,E 1-50 SME
C205	87-010-263-049		CAP,E 100-10
C206	87-A10-116-049		CAP,E 330-6.3 GAS
C207	87-010-494-049		CAP,E 1-50 GAS
C208	87-010-196-089		C-CAP,S 0.1-25 F
C209	87-010-316-089		C-CAP,S 33P-50 CH
C210	87-010-154-089		C-CAP,S 10P-50 CH
C211	87-015-689-049		CAP,E 10-35 7L
C212	87-010-498-049		CAP,E 10-16 GAS
C213	87-010-196-089		C-CAP,S 0.1-25 F
C214	87-010-196-089		C-CAP,S 0.1-25 F
C215	87-010-196-089		C-CAP,S 0.1-25 F
C223	87-010-178-089		C-CAP,S 1000P-50 B
C250	87-010-178-089		C-CAP,S 1000P-50 B
C251	87-010-196-089		C-CAP,S 0.1-25 F
C381	87-010-196-089		C-CAP,S 0.1-25 F
C382	87-010-196-089		C-CAP,S 0.1-25 F
C383	87-010-196-089		C-CAP,S 0.1-25 F
C384	87-010-196-089		C-CAP,S 0.1-25 F
C385	87-010-322-089		C-CAP,S 100P-50 CH
C389	87-010-196-089		C-CAP,S 0.1-25 F
C401	87-010-196-089		C-CAP,S 0.1-25 F
C402	87-010-196-089		C-CAP,S 0.1-25 F
C501	87-010-553-049		CAP,E 47-16 GAS
C602	87-010-322-089		C-CAP,S 100P-50 CH
C603	87-010-177-089		C-CAP,S 820P-50 SL
C604	87-010-186-089		C-CAP,S 4700P-50 B
C605	87-010-491-049		CAP,E 0.22-50 GAS
C606	87-010-196-089		C-CAP,S 0.1-25 F
C607	87-010-321-089		C-CAP,S 82P-50 CH
C608	87-010-112-049		CAP,E 100-16
C609	87-010-196-089		C-CAP,S 0.1-25 F
C611	87-010-248-049		CAP,E 220-10 SME
C612	87-010-322-089		C-CAP,S 100P-50 CH
C613	87-010-196-089		C-CAP,S 0.1-25 F
C630	87-010-498-049		CAP,E 10-16 GAS
C640	87-010-406-049		CAP,E 22-50 SME
C646	87-010-196-089		C-CAP,S 0.1-25 F
C651	87-010-152-089		C-CAP,S 8P-50 CH
C652	87-010-152-089		C-CAP,S 8P-50 CH
C653	87-010-426-089		C-CAP,S 0.012-25 B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C654	87-010-178-089		C-CAP,S 1000P-50 B
C656	87-012-358-089		C-CAP S 0.47-10FZ
C657	87-010-196-089		C-CAP,S 0.1-25 F
C658	87-010-263-049		CAP,E 100-10
C659	87-010-263-049		CAP,E 100-10
C661	87-010-177-089		C-CAP,S 820P-50 SL
C664	87-012-141-089		C-CAP,S 0.22-16 F
C665	87-010-184-089		C-CAP,S 3300P-50 B
C666	87-010-426-089		C-CAP,S 0.012-25 B
C668	87-012-358-089		C-CAP S 0.47-10FZ
C669	87-010-404-049		CAP,E 4.7-50 SME
C670	87-010-404-049		CAP,E 4.7-50 SME
C671	87-012-156-089		C-CAP,S 220P-50 CH
C675	87-010-180-089		C-CAP,S 1500P-50 B
C714	87-010-263-049		CAP,E 100-10
FB601	87-008-372-089		FLTR,EMI BL 01RN1
FL101	86-NF5-603-019		FL,BJ454GK<V>
FL101	86-NF4-610-019		FL,BJ461GK<NAP1MK3,820EZ>
J601	82-NF7-630-019		JACK,3.5 MO
J621	82-NF7-630-019		JACK,3.5 MO
L201	87-A50-052-019		COIL,CLOCK 5.76MHZ T1
L650	87-005-487-089		COIL,150UH J FLR50
LED401	87-070-281-089		LED,SLZ736A-25-S-T
LED402	87-070-281-089		LED,SLZ736A-25-S-T
LED403	87-070-281-089		LED,SLZ736A-25-S-T
LED404	87-070-281-089		LED,SLZ736A-25-S-T
LED405	87-070-281-089		LED,SLZ736A-25-S-T
LED406	87-070-281-089		LED,SLZ736A-25-S-T
LED407	87-070-199-089		LED,SLP738F-81-S-T1
LED408	87-070-199-089		LED,SLP738F-81-S-T1
LED409	87-070-199-089		LED,SLP738F-81-S-T1
LED410	87-070-199-089		LED,SLP738F-81-S-T1
LED411	87-070-199-089		LED,SLP738F-81-S-T1
LED412	87-070-199-089		LED,SLP738F-81-S-T1
LED413	87-070-199-089		LED,SLP738F-81-S-T1
LED414	87-070-199-089		LED,SLP738F-81-S-T1
LED420	87-070-201-089		LED,SLP9118C-51-S-T1
LED421	87-070-201-089		LED,SLP9118C-51-S-T1
LED422	87-070-201-089		LED,SLP9118C-51-S-T1
LED423	87-070-201-089		LED,SLP9118C-51-S-T1
LED424	87-070-278-019		LED,SLZ-738A-24-S
LED425	87-070-278-019		LED,SLZ-738A-24-S
LED426	87-070-278-019		LED,SLZ-738A-24-S
LED427	87-070-278-019		LED,SLZ-738A-24-S
LED428	87-070-290-019		LED,SLZ 936-30-S
LED429	87-070-290-019		LED,SLZ 936-30-S
LED451	87-070-201-089		LED,SLP9118C-51-S-T1
LED452	87-070-201-089		LED,SLP9118C-51-S-T1
LED453	87-070-201-089		LED,SLP9118C-51-S-T1
LED454	87-070-201-089		LED,SLP9118C-51-S-T1
LED455	87-070-201-089		LED,SLP9118C-51-S-T1
LED456	87-070-201-089		LED,SLP9118C-51-S-T1
S301	87-036-215-089		SW,TACT EVQ21404M
S302	87-036-215-089		SW,TACT EVQ21404M
S303	87-036-215-089		SW,TACT EVQ21404M
S304	87-036-215-089		SW,TACT EVQ21404M
S305	87-036-215-089		SW,TACT EVQ21404M
S306	87-036-215-089		SW,TACT EVQ21404M<NAP1MK3,820EZ>
S307	87-036-215-089		SW,TACT EVQ21404M<NAP1MK3,820EZ>
S308	87-036-215-089		SW,TACT EVQ21404M<NAP1MK3,820EZ>
S321	87-036-215-089		SW,TACT EVQ21404M
S322	87-036-215-089		SW,TACT EVQ21404M
S323	87-036-215-089		SW,TACT EVQ21404M
S324	87-036-215-089		SW,TACT EVQ21404M
S325	87-036-215-089		SW,TACT EVQ21404M
S326	87-036-215-089		SW,TACT EVQ21404M
S327	87-036-215-089		SW,TACT EVQ21404M
S328	87-036-215-089		SW,TACT EVQ21404M
S341	87-036-215-089		SW,TACT EVQ21404M
S342	87-036-215-089		SW,TACT EVQ21404M

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S343	87-036-215-089		SW,TACT EVQ21404M
S344	87-036-215-089		SW,TACT EVQ21404M
S345	87-036-215-089		SW,TACT EVQ21404M
S346	87-036-215-089		SW,TACT EVQ21404M
S347	87-036-215-089		SW,TACT EVQ21404M
S348	87-036-215-089		SW,TACT EVQ21404M
VR601	82-NK7-616-019		VR,10KB RK11K1130
VR602	82-NK7-615-019		VR,10KA RK11K1130
W104	88-913-181-119		FF-CABLE,13P 1.25
W301	83-NF8-613-019		F-CABLE 2P-2.0 KEY
W501	88-915-181-119		FF-CABLE,15P 1.25
W801	88-910-131-119		FF-CABLE,10P 1.25

MVR C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C701	87-010-401-089		CAP,E 1-50 SME
C702	87-010-401-089		CAP,E 1-50 SME
C703	87-010-993-089		C-CAP,S 0.056-25 B
C704	87-010-993-089		C-CAP,S 0.056-25 B
C705	87-012-393-089		C-CAP,S 0.022-16 RK
C706	87-012-393-089		C-CAP,S 0.022-16 RK
C707	87-010-182-089		C-CAP,S 2200P-50 B
C708	87-010-182-089		C-CAP,S 2200P-50 B
C709	87-012-393-089		C-CAP,S 0.22-16,R,K
C710	87-012-393-089		C-CAP,S 0.22-16,R,K
C711	87-016-081-089		C-CAP,S 0.1-16 RK
C712	87-010-405-089		CAP,E 10-50 SME
C713	87-010-260-089		CAP,E 47-25 SME
C715	87-010-401-089		CAP,E 1-50 SME
C751	87-010-198-089		C-CAP,S 0.022-25 B
MVR751	86-NF5-617-019		VR,RTRY 50KBX2 W/S

KEY C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S349	87-036-215-089		SW,TACT EVQ21404M
S350	87-036-215-089		SW,TACT EVQ21404M
S351	87-036-215-089		SW,TACT EVQ21404M
S352	87-036-215-089		SW,TACT EVQ21404M
S353	87-036-215-089		SW,TACT EVQ21404M

AC C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C103	87-010-187-089		C-CAP,S 0.01-25 B
⚠PR101	87-026-682-089		PROTECTOR,10A 60V 491
⚠PR102	87-026-682-089		PROTECTOR,10A 60V 491

PT C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠	82-304-743-019		TERMINAL,1P
⚠CF109	87-033-213-088		CLAMP FUSE SMK
⚠CF110	87-033-213-089		CLAMP FUSE SMK
⚠F109	87-035-364-019		FUSE,T 1.6A 250V T E
⚠PT001	86-NF5-608-019		PT,E 6NF-5

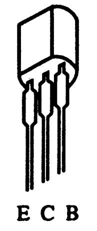
DECK C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
SFR1	87-024-581-089		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-310		SOL ASSY,27
SOL2	82-ZM1-626-310		SOL ASSY,27K
SW1	87-036-378-019		SW,PUSH 1-1-1 SH2
SW2	87-036-378-019		SW,PUSH 1-1-1 SH2
SW3	87-036-378-019		SW,PUSH 1-1-1 SH2
SW4	87-036-378-019		SW,PUSH 1-1-1 SH2
SW5	87-036-378-019		SW,PUSH 1-1-1 SH2
SW6	87-036-378-019		SW,PUSH 1-1-1 SH2
SW8	87-036-378-019		SW,PUSH 1-1-1 SH2

HEAD-1 C.B

HEAD-2 C.B

TRANSISTOR ILLUSTRATION



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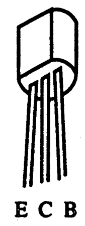

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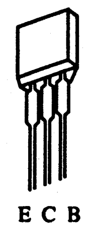

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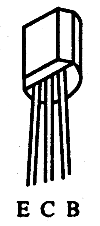
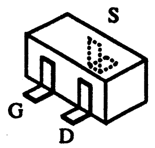
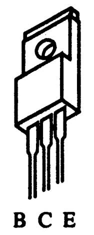
DTA114ES
2SA933S



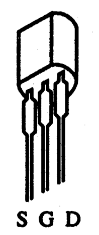
2SA1318
2SC3331T



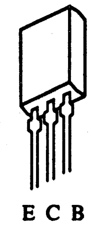
2SK543



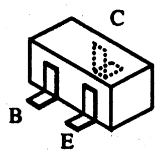
2SB1370



2SK246



2SD2005

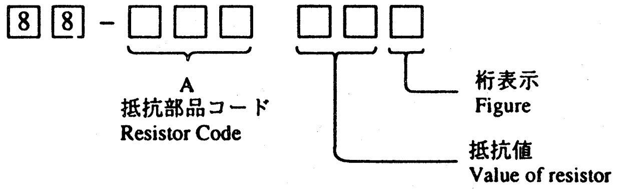


2SA1162GR
2SC2712GR
2SC2714
2SC3722K
2SC3326B
DTC144EK

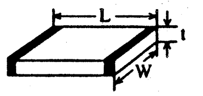
DTA144EK
DTA143EK
DTA124EK
DTC144WK
2SD2114 K,U,V

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

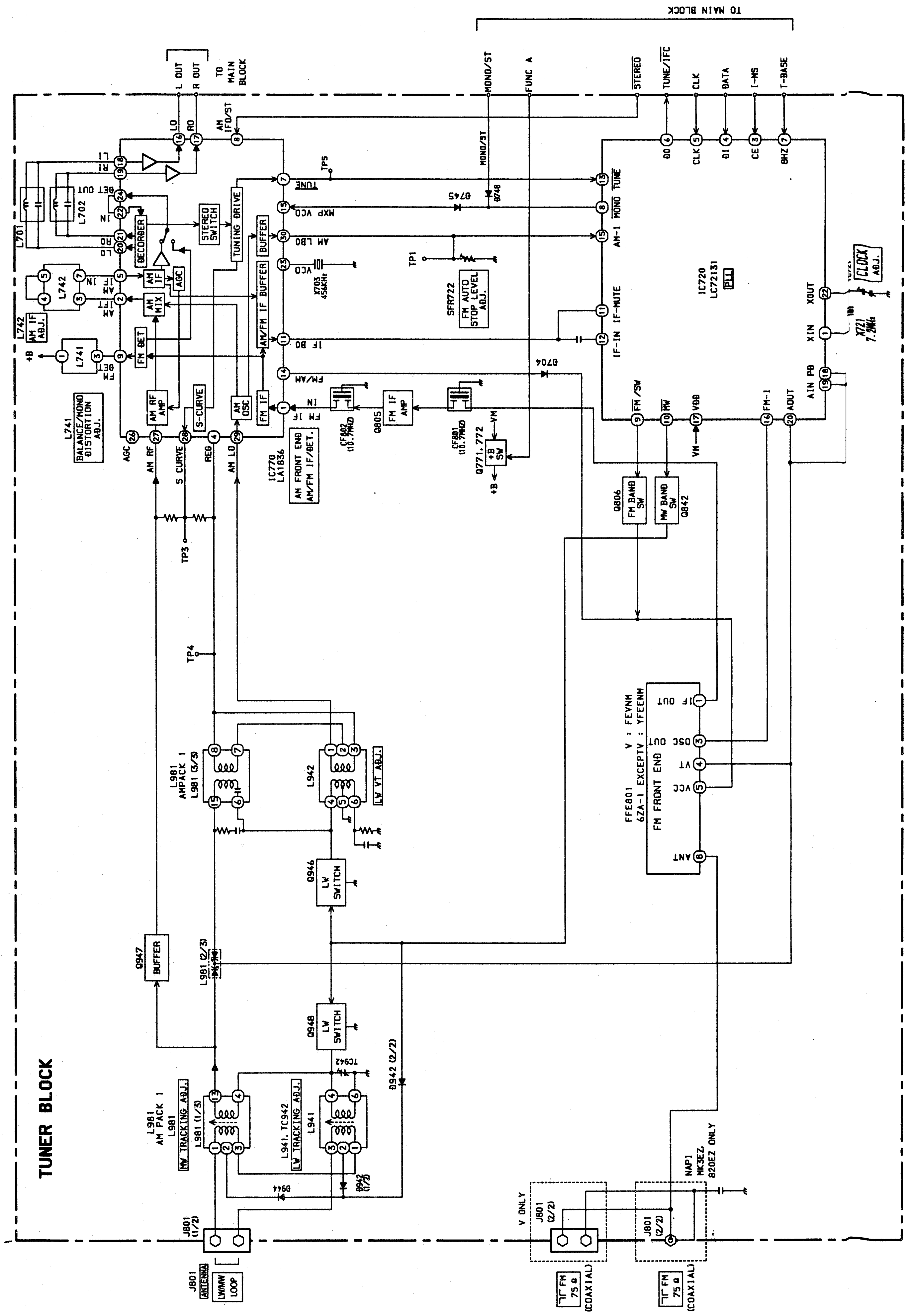
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding


8 8 - □□□ □□□
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

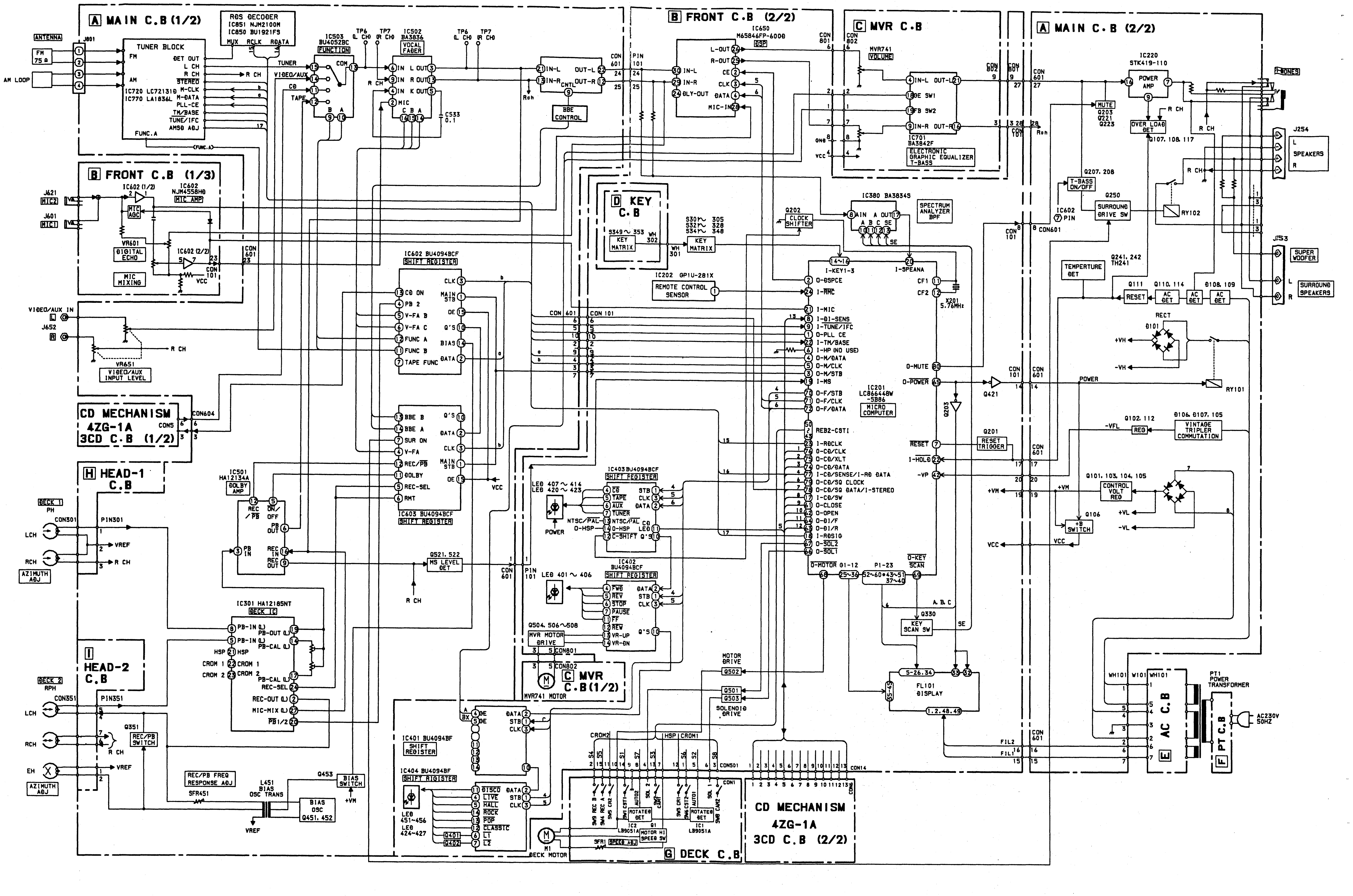
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code: A
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

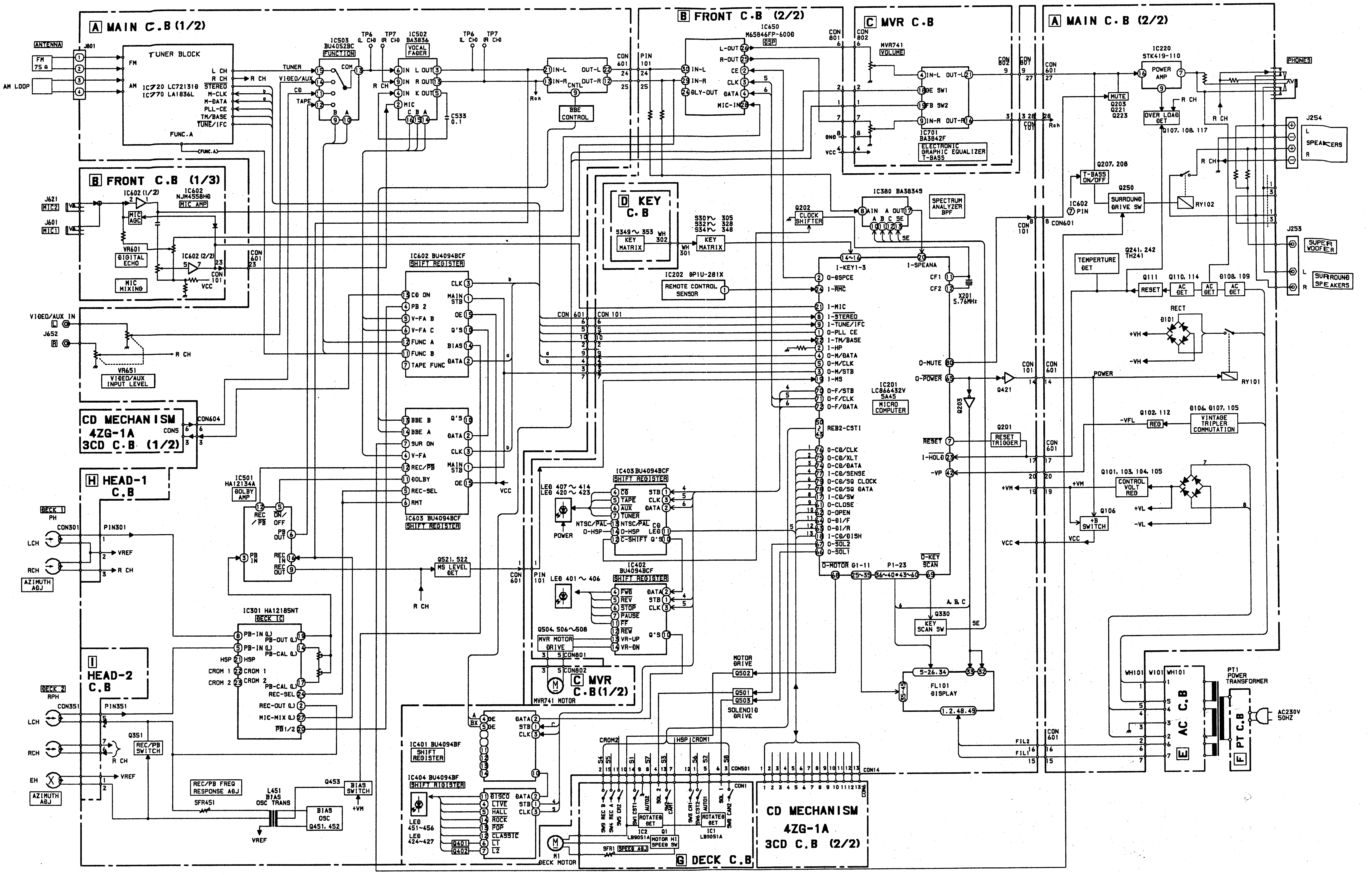
BLOCK DIAGRAM – 1 (TUNER)


TO MAIN BLOCK
L OUT
R OUT
TO MAIN BLOCK
MONO/ST
FUNC A
STEREO
TUNE/IFC
CLK
DATA
I-MS
T-BASE
TUNER BLOCK
IC720
LC72131
PLL
IC770
LA1836
AM FRONT END
AM/FM IF/DET.
DECORDER
STEREO SWITCH
TUNING DRIVE
BUFFER
AM/FM IF BUFFER
AM MIX
AM IF
AGC
FM DET
AM RF AMP
S-CURVE
AM OSC
FM IF
L741 BALANCE/MONO DISTORTION ADJ.
L742 AM IF ADJ.
SFR722 FM AUTO STOP LEVEL ADJ.
CLOCK ADJ.
X721 7.2MHz
X703 456kHz
CF802 (10.7MHz)
CF801 (10.7MHz)
Q805 FM IF AMP
Q771,772 +B SW
Q806 FM BAND SW
Q842 MW BAND SW
FFE801
6ZA-1 EXCEPT V : YFEENM
V : FEVNM
FM FRONT END
IF OUT
OSC OUT
VT
VCC
ANT
L981 AMPACK 1
L942
LW VT ADJ.
Q944 LW SWITCH
Q947 BUFFER
Q948 LW SWITCH
L981 AM PACK 1
MW TRACKING ADJ.
L941,TC942 LW TRACKING ADJ.
J801 (1/2)
J801 ANTENNA
MW/LW LOOP
V ONLY
J801 (2/2)
NAP1 MK3EZ 820EZ ONLY
FM 75Ω (COAXIAL)
TP1
TP3
TP4
TP5

BLOCK DIAGRAM – 2 (MAIN / FRONT : EZ)

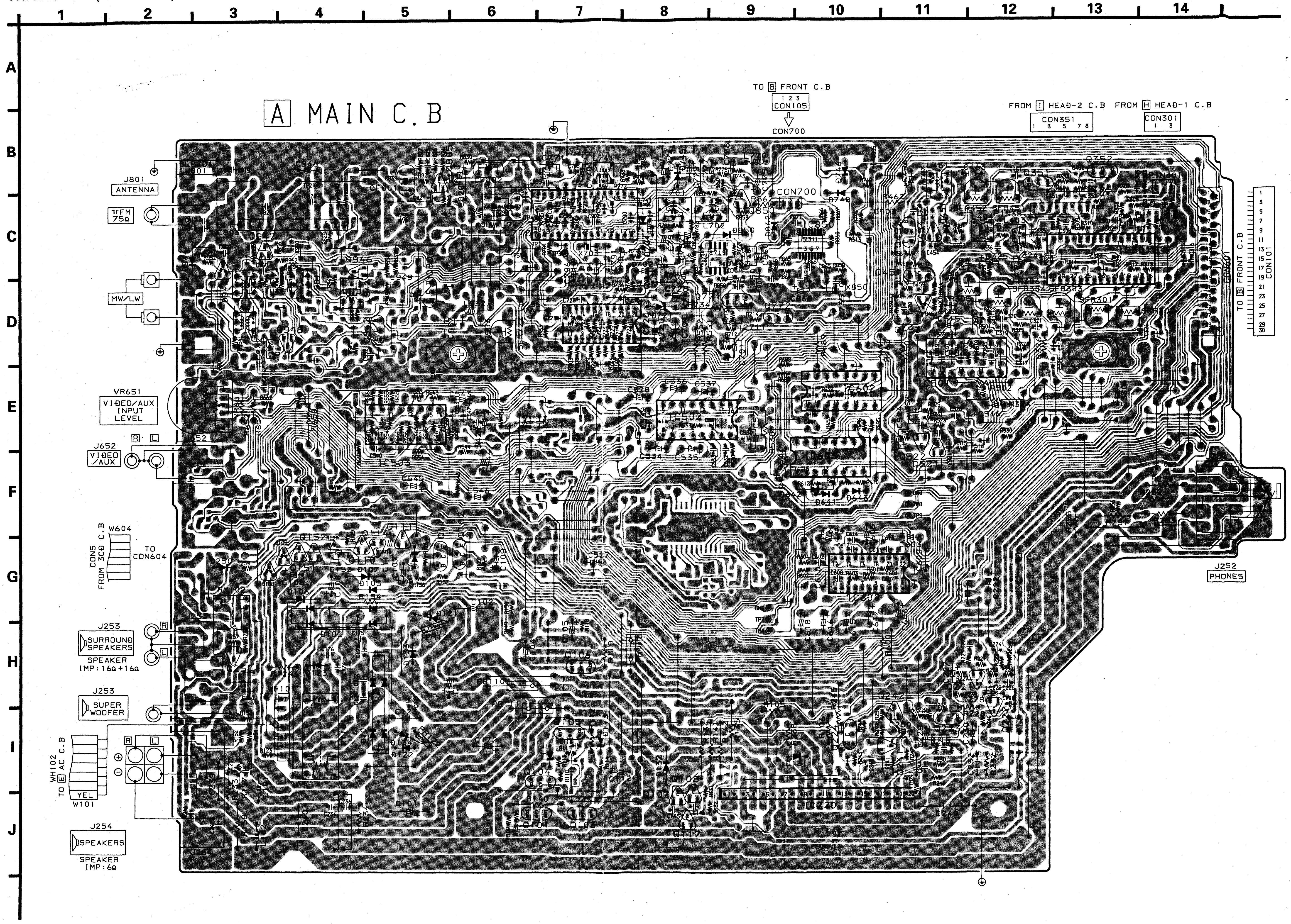

A MAIN C.B (1/2)
ANTENNA
FM 75 Ω
AM LOOP
J801
TUNER BLOCK
IC720 LC72131D
IC770 LA1836L
DET OUT
L CH
R CH
STEREO
M-CLK
M-DATA
PLL-CE
TM/BASE
TUNE/IFC
AMSD ADJ
FUNC.A
RDS DECODER
IC851 NJM2100M
IC850 BU1921FS
MUX
RCLK
RDATA
IC503 BU4052BC
FUNCTION
TUNER
VIDEO/AUX
CD
TAPE
COM
IC502 BA3836
VOCAL FADER
TP6 L CH
TP7 R CH
C533 0.1
BBE CONTROL
IN-L
IN-R
OUT-L
OUT-R
CNTL
B FRONT C.B (1/3)
IC602 (1/2)
IC602 NJM4558HD
MIC AMP
J621 MIC2
J601 MIC1
MIC AGC
VR601
DIGITAL ECHO
IC602 (2/2)
MIC MIXING
VCC
CON601
CON101
VIDEO/AUX IN
J652
VR651
VIDEO/AUX INPUT LEVEL
CD MECHANISM 4ZG-1A 3CD C.B (1/2)
CON604
CON5
H HEAD-1 C.B
DECK 1
PH
CON301
PIN301
LCH
RCH
VREF
AZIMUTH ADJ
I HEAD-2 C.B
DECK 2
RPH
CON351
PIN351
EH
Q351
REC/PB SWITCH
IC501 HA12134A
DOLBY AMP
REC/PB
ON/OFF
PB OUT
PB IN
REC IN
REC OUT
IC301 HA12185NT
DECK IC
PB-IN (L)
PB-OUT (L)
PB-CAL (L)
HSP
CROM 1
CROM 2
REC-SEL
REC-OUT (L)
MIC-MIX (L)
PB1/2
REC/PB FREQ RESPONSE ADJ
SFR451
L451 BIAS OSC TRANS
BIAS OSC Q451, 452
Q453
BIAS SWITCH
+VM
IC602 BU4094BCF SHIFT REGISTER
CD ON
PB 2
V-FA B
V-FA C
FUNC A
FUNC B
TAPE FUNC
CLK
MAIN STB
OE
Q'S
BIAS
DATA
IC603 BU4094BCF SHIFT REGISTER
BBE B
BBE A
SUR ON
V-FA
REC/PB
DOLBY
REC-SEL
RMT
Q521, 522
MS LEVEL DET
IC401 BU4094BF SHIFT REGISTER
IC404 BU4094BF SHIFT REGISTER
DISCO
LIVE
HALL
ROCK
POP
CLASSIC
L1
L2
LED 451~456
LED 424~427
Q401
Q402
IC403 BU4094BCF SHIFT REGISTER
LED 407~414
LED 420~423
POWER
NTSC/PAL
O-HSP
C-SHIFT
IC402 BU4094BCF SHIFT REGISTER
LED 401~406
FWD
REV
STOP
PAUSE
FF
REW
VR-UP
VR-DN
Q504, 506~508
MVR MOTOR DRIVE
CON801
CON802
C MVR C.B (1/2)
MVR741 MOTOR
M1 DECK MOTOR
SFR1
SPEED ADJ
D KEY C.B
S349~353
KEY MATRIX
S301~305
S321~328
S341~348
WH 301
WH 302
IC202 GP1U-281X
REMOTE CONTROL SENSOR
B FRONT C.B (2/2)
IC650 M65846FP-600D
DSP
L-OUT
R-OUT
DLY-OUT
MIC-IN
CE
CLK
DATA
C MVR C.B
MVR741 VOLUME
IC701 BA3842F
ELECTRONIC GRAPHIC EQUALIZER T-BASS
SW1
SW2
GND
VCC
IC380 BA3834S
SPECTRUM ANALYZER BPF
Q202
CLOCK SHIFTER
IC201 LC866448W-5B86
MICRO COMPUTER
I-KEY1-3
I-SPEANA
O-DSPCE
I-RMC
I-MIC
I-DI-SENS
I-TUNE/IFC
O-PLL CE
I-TM/BASE
I-HP (NO USE)
O-M/DATA
O-M/CLK
O-M/STB
I-MS
O-F/STB
O-F/CLK
O-F/DATA
REB2-CSTI
I-RDCLK
O-CD/CLK
O-CD/XLT
O-CD/DATA
I-CD/SENSE/I-RD DATA
O-CD/SQ CLOCK
O-CD/SQ DATA/I-STEREO
I-CD/SW
O-CLOSE
O-OPEN
O-DI/F
O-DI/R
I-RDSIG
O-SOL2
O-SOL1
CF1
CF2
X201 5.76MHz
O-MUTE
O-POWER
RESET
I-HOLD
-VP
O-MOTOR
O-KEY SCAN
Q203
Q421
Q201
RESET TRIGGER
Q330
KEY SCAN SW
FL101 DISPLAY
MOTOR DRIVE
Q502
Q501
Q503
SOLENOID DRIVE
G DECK C.B
CON501
CON1
ROTATED DET
IC2 LB9051A
IC1 LB9051A
MOTOR HI SPEED SW
CD MECHANISM 4ZG-1A 3CD C.B (2/2)
CON14
CON6
A MAIN C.B (2/2)
IC220 STK419-110
POWER AMP
MUTE Q203 Q221 Q223
OVER LOAD DET Q107, 108, 117
PHONES
J254
SPEAKERS
L
R
J153
SUPER WOOFER
SURROUND SPEAKERS
Q207, 208
T-BASS ON/OFF
Q250
SURROUND DRIVE SW
RY102
IC602 PIN
Q241, 242 TH241
TEMPERTURE DET
Q111 RESET
Q110, 114 AC DET
Q108, 109 AC DET
RECT D101
+VH
-VH
RY101
Q102, 112 REG
-VFL
D106, D107, 105 VINTAGE TRIPLER COMMUTATION
Q101, 103, 104, 105 CONTROL VOLT REG
+VM
Q106 +B SWITCH
+VL
-VL
VCC
WH101
W101
E AC C.B
PT1 POWER TRANSFORMER
F PT C.B
AC230V 50HZ
FIL1
FIL2

BLOCK DIAGRAM — 3 (MAIN / FRONT : V)

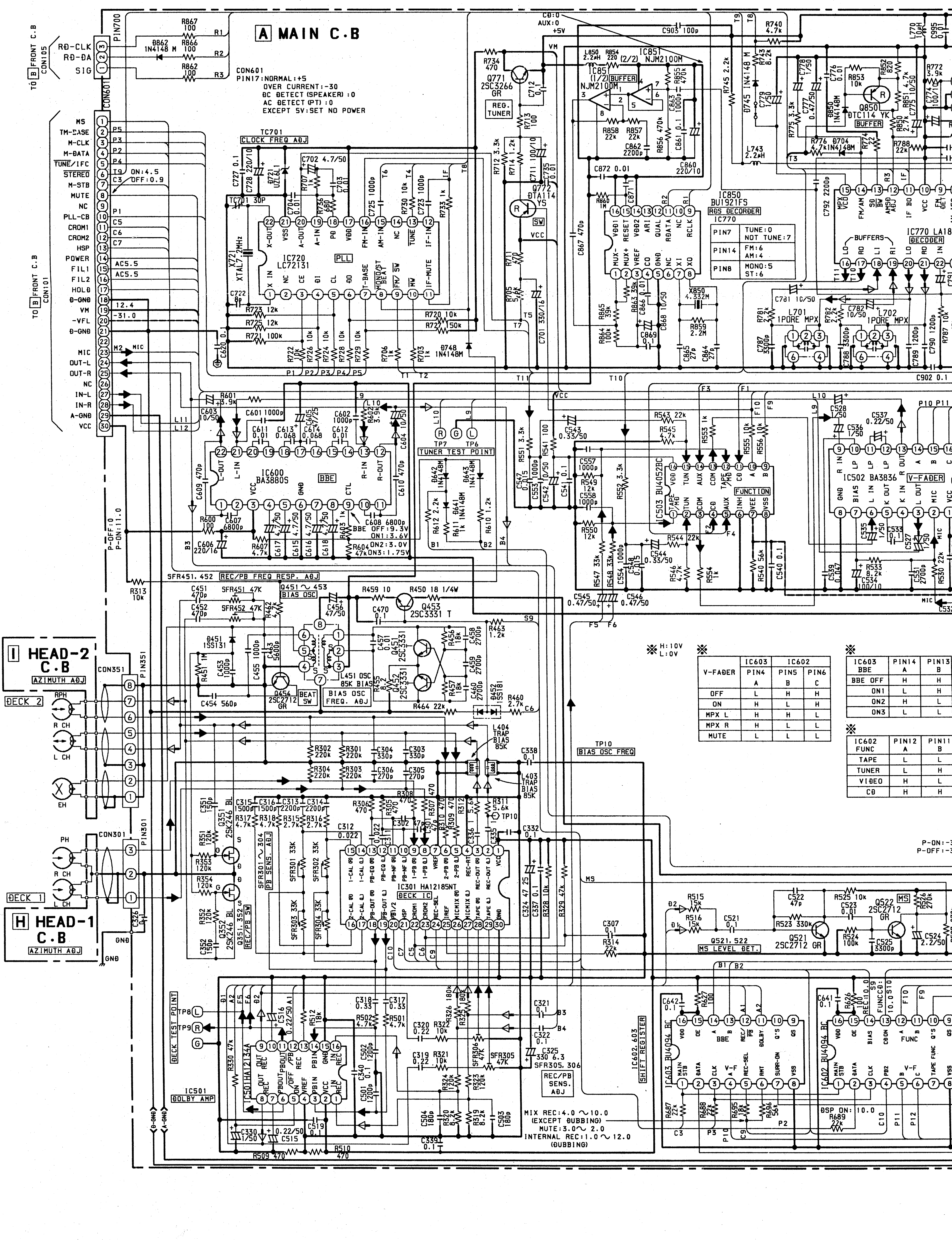


A MAIN C.B (1/2)
ANTENNA
FM 75 Ω
AM LOOP
J801
TUNER BLOCK
IC720 LC72131D
IC770 LA1836L
FUNC.A
IC503 BU4052BC FUNCTION
IC502 BA3836 VOCAL FADER
TUNER
VIDEO/AUX
CD
TAPE
C533 0.1
BBE CONTROL
B FRONT C.B (1/3)
J621 MIC2
J601 MIC1
IC602 (1/2) NJM4558MD MIC AMP
MIC AGC
VR601 DIGITAL ECHO
IC602 (2/2)
MIC MIXING
VIDEO/AUX IN L R J652
VR651 VIDEO/AUX INPUT LEVEL
CD MECHANISM 4ZG-1A 3CD C.B (1/2)
CON604 CON5
H HEAD-1 C.B
DECK 1 PH
CON301 PIN301
AZIMUTH ADJ
I HEAD-2 C.B
DECK 2 RPH
CON351 PIN351
Q351 REC/PB SWITCH
EH
REC/PB FREQ RESPONSE ADJ
SFR451
L451 BIAS OSC TRANS
BIAS OSC Q451, 452
Q453 BIAS SWITCH
IC501 HA12134A DOLBY AMP
IC301 HA12185NT DECK IC
IC602 BU4094BCF SHIFT REGISTER
IC603 BU4094BCF SHIFT REGISTER
Q521, 522 MS LEVEL DET
IC401 BU4094BF SHIFT REGISTER
IC404 BU4094BF SHIFT REGISTER
Q401 Q402
B FRONT C.B (2/2)
IC650 M65846FP-600D DSP
D KEY C.B
S349~353 KEY MATRIX
S301~305 S321~328 S334~348 KEY MATRIX
IC202 SPIU-281X REMOTE CONTROL SENSOR
IC403 BU4094BCF SHIFT REGISTER
LED 407~414 LED 420~423
IC402 BU4094BCF SHIFT REGISTER
LED 401~406
Q504, 506~508 MVR MOTOR DRIVE
C MVR C.B (1/2)
MVR741 MOTOR
Q202 CLOCK SHIFTER
IC380 BA3834S
SPECTRUM ANALYZER BPF
IC201 LC866432V 5A45 MICRO COMPUTER
X201 5.76MHz
Q421
Q203
Q201 RESET TRIGGER
MOTOR DRIVE Q502
Q501 Q503 SOLENOID DRIVE
Q330 KEY SCAN SW
FL101 DISPLAY
G DECK C.B
M1 DECK MOTOR
SFR1 SPEED ADJ
IC2 LB9051A ROTATED DET
IC1 LB9051A ROTATED DET
MOTOR H1 SPEED SW
CD MECHANISM 4ZG-1A 3CD C.B (2/2)
C MVR C.B
MVR741 VOLUME
IC701 BA3842F ELECTRONIC GRAPHIC EQUALIZER T-BASS
A MAIN C.B (2/2)
IC220 STK419-110 POWER AMP
PHONES
MUTE Q203 Q221 Q223
OVER LOAD DET Q107, 108, 117
J254 L SPEAKERS R
Q207, 208 T-BASS ON/OFF
Q250 SURROUND DRIVE SW
RY102
IC602 PIN
J253 SUPER WOOFER
SURROUND SPEAKERS
TEMPERTURE DET
Q241, 242 TH241
Q111 RESET
Q110, 114 AC DET
D108, 109 AC DET
RECT D101
RY101
POWER
Q102, 112 REG
D106, D107, 105 VINTAGE TRIPLER COMMUTATION
Q101, 103, 104, 105 CONTROL VOLT REG
Q106 +B SWITCH
WH101 W101 WH101
E AC C.B
PT1 POWER TRANSFORMER
F PT C.B
AC230V 50HZ

WIRING – 1 (MAIN : EZ)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
TO B FRONT C.B
1 2 3
CON105
CON700
FROM I HEAD-2 C.B
CON351
1 3 5 7 8
FROM H HEAD-1 C.B
CON301
1 3
TO B FRONT C.B
CON101
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 30
J801
ANTENNA
FM 75Ω
MW/LW
VR651
VIDEO/AUX INPUT LEVEL
J652
R L
VIDEO /AUX
W604
CONS FROM 3CD C.B
TO CON604
J253
SURROUND SPEAKERS
SPEAKER IMP: 16Ω+16Ω
J253
SUPER WOOFER
WH102
TO E AC C.B
YEL
W101
J254
SPEAKERS
SPEAKER IMP: 6Ω
J252
PHONES
CON700
IC502
IC503
IC220
IC601
X703
X850
L701
L702
Q352
Q351
Q242
Q104
Q103
Q106
Q108
Q110
C101
C102
PR121
J250
J254

SCHEMATIC DIAGRAM - 1 (MAIN : EZ)


A MAIN C·B
TO B FRONT C.B CON105
RD-CLK
RD-DA
SIG
CON601
PIN700
CON601
PIN17:NORMAL:+5
OVER CURRENT:-30
DC DETECT (SPEAKER) :0
AC DETECT (PT) :0
EXCEPT 5V:SET NO POWER
TO B FRONT C.B CON101
MS
TM-CASE
M-CLK
M-DATA
TUNE/IFC
STEREO
M-STB
MUTE
NC
PLL-CB
CROM1
CROM2
HSP
POWER
FIL1
FIL2
HOLD
D-GND
VM
-VFL
D-GND
MIC
OUT-L
OUT-R
NC
IN-L
IN-R
A-GND
VCC
TC701 CLOCK FREQ ADJ
IC720 LC72131
PLL
X721 XTAL7.2MHz
Q771 2SC3266 GR
REG. TUNER
Q772 DTA114 YS
SW
IC851 (1/2) BUFFER NJM2100M
IC851 (2/2) NJM2100M
IC850 BU1921FS
RDS DECORDER
IC770
PIN7 TUNE:0 NOT TUNE:7
PIN14 FM:6 AM:4
PIN8 MONO:5 ST:6
X850 4.332M
Q850 DTC114 YK
BUFFER
IC770 LA18
DECODER
BUFFERS
L701 1PORE MPX
L702 1PORE MPX
IC600 BA3880S
BBE
BBE OFF:9.3V ON1:3.6V ON2:3.0V ON3:1.75V
TP7 TP6
TUNER TEST POINT
IC503 BU4052BC
FUNCTION
IC502 BA3836
V-FADER
SFR451. 452 REC/PB FREQ RESP. ADJ
Q451~453 BIAS OSC
Q453 2SC3331 T
Q451 2SC3331
Q452 2SC3331
Q454 2SC2712 GR
BEAT SW
L451 OSC 85K BIAS
BIAS OSC FREQ. ADJ
L404 TRAP BIAS 85K
L403 TRAP BIAS 85K
TP10 BIAS OSC FREQ
I HEAD-2 C·B
AZIMUTH ADJ
DECK 2
RPH
R CH
L CH
EH
CON351
PIN351
PH
DECK 1
H HEAD-1 C·B
AZIMUTH ADJ
CON301
PIN301
Q351 2SK246 BL
Q352 2SK246 BL
Q351. 352 REC/PB SW
SFR301~304 PB SENS. ADJ
IC301 HA12185NT
DECK IC
MS
Q521. 522 MS LEVEL DET.
Q521 2SC2712 GR
Q522 2SC2712 GR
P-ON:11.0
P-OFF:0
DECK TEST POINT
TP8 TP9
IC501 HA12134A
IC501 DOLBY AMP
SFR305. 306 REC/PB SENS. ADJ
IC602. 603 SHIFT REGISTER
IC603 BU4094 BC
IC602 BU4094 BC
MIX REC:4.0 ~10.0 (EXCEPT DUBBING)
MUTE:3.0~ 2.0
INTERNAL REC:1.0 ~12.0 (DUBBING)
DSP ON: 10.0
P-ON:-
P-OFF:-

※ H:10V
L:0V

※

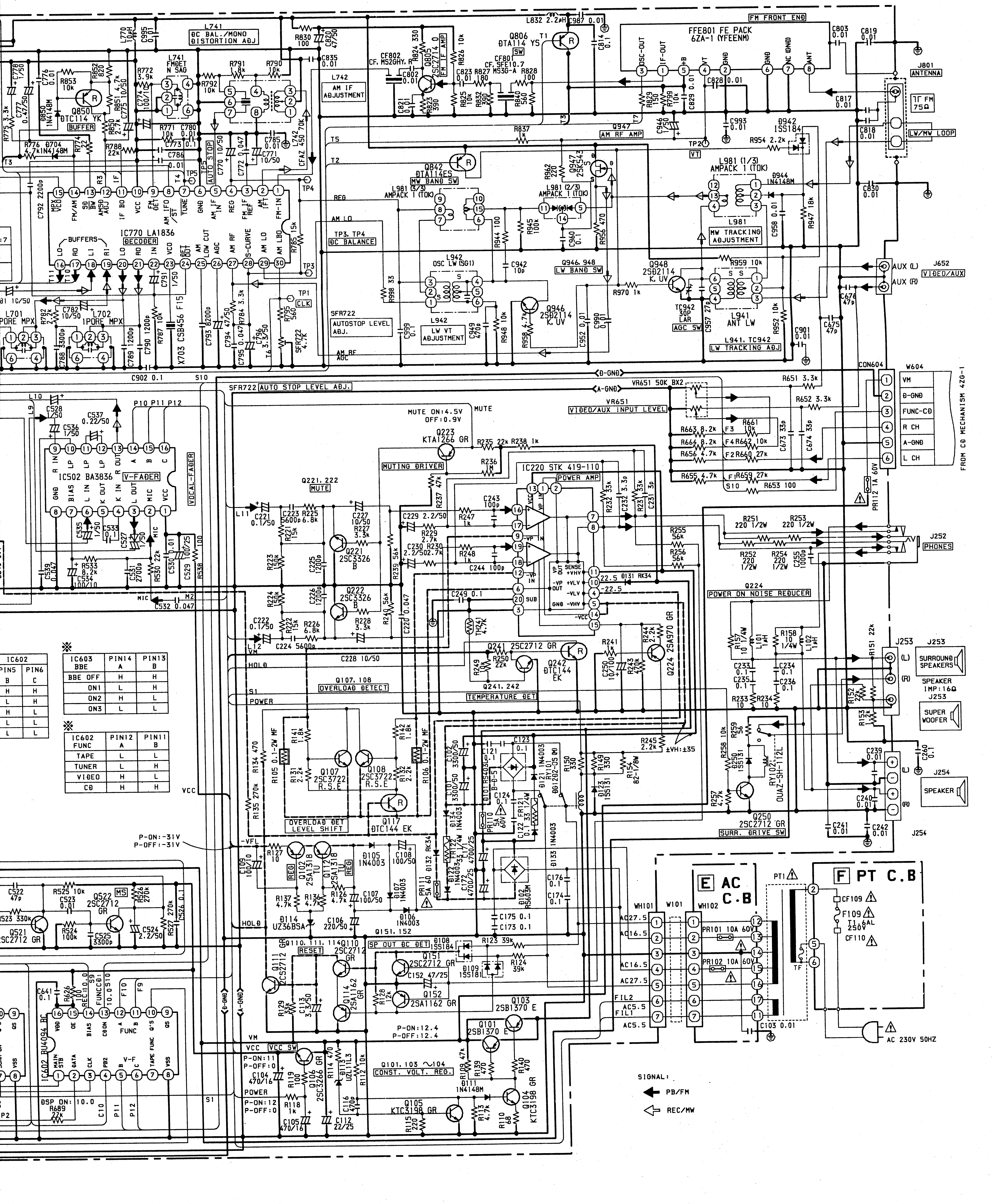
V-FADER	IC603	IC602	
	PIN4 A	PIN5 B	PIN6 C
OFF	L	H	H
ON	H	L	H
MPX L	H	H	L
MPX R	H	L	L
MUTE	L	L	L

※

IC603 BBE	PIN14 A	PIN13 B
BBE OFF	H	H
ON1	L	H
ON2	H	L
ON3	L	L

※

IC602 FUNC	PIN12 A	PIN11 B
TAPE	L	L
TUNER	L	H
VIDEO	H	L
CD	H	H


FM FRONT END
FFE801 FE PACK
6ZA-1 (YFEENM)
OSC-OUT
IF-OUT
+B
VT
GND
NC (GND)
ANT
J801
ANTENNA
1F FM 75Ω
LW/MW LOOP
L741 DC BAL./MONO DISTORTION ADJ
L741 FMDET N SAG
Q850 DTC114 YK
BUFFER
L742 AM IF ADJUSTMENT
Q805 2SC2714 O
FM IF AMP
Q806 DTA114 YS
SW
Q947 AM RF AMP
Q842 DTA114ES
MW BAND SW
L981 (3/3) AMPACK 1 (TOK)
L981 (2/3) AMPACK 1 (TOK)
L981 (1/3) AMPACK 1 (TOK)
L981 MW TRACKING ADJUSTMENT
Q946, 948 LW BAND SW
Q948 2SD2114 K, UV
Q946 2SD2114 K, UV
L942 OSC LW (SG1)
L942 LW VT ADJUSTMENT
L941 ANT LW
L941, TC942 LW TRACKING ADJ
AGC SW
IC770 LA1836
DECODER
BUFFERS
AUTO STOP
TP3, TP4 DC BALANCE
SFR722 AUTOSTOP LEVEL ADJ.
L701 1PORE MPX
L702 1PORE MPX
X703 CSB456 F15
J652 AUX (L) AUX (R) VIDEO/AUX
CON604
W604
VM
D-GND
FUNC-CD
R CH
A-GND
L CH
FROM CD MECHANISM 4ZG-1
SFR722 AUTO STOP LEVEL ADJ.
VR651 50K BX2
VR651 VIDEO/AUX INPUT LEVEL
MUTE ON:4.5V OFF:0.9V
MUTE
Q223 KTA1266 GR
MUTING DRIVER
Q221, 222 MUTE
Q221 2SC3326 B
Q222 2SC3326 B
IC220 STK 419-110
POWER AMP
IC502 BA3836
V-FADER
VOCAL-FADER
J252 PHONES
Q224 POWER ON NOISE REDUCER
Q224 2SA970 GR
Q241 2SC2712 GR
Q242 DTC144 EK
Q241, 242 TEMPERATURE DET
Q107, 108 OVERLOAD DETECT
Q107 2SC3722 R.S.E
Q108 2SC3722 R.S.E
OVERLOAD DET LEVEL SHIFT
Q117 DTC144 EK
J253 SURROUND SPEAKERS
SPEAKER IMP:16Ω
J253 SUPER WOOFER
J254 SPEAKER
Q250 2SC2712 GR
SURR. DRIVE SW
RY101 OUAZ-SH-112L
RY101 DG1202-OS (M)
P-ON:-31V P-OFF:-31V
Q102 2SA1318 TU
Q112 2SA1318 TU
REG
D114 UZ36BSA
Q110, 111, 114 RESET
Q111 2SC2712 GR
Q110 2SC2712 GR
Q114 2SA1162 GR
Q151, 152 SP OUT DC DET
Q151 2SC2712 GR
Q152 2SA1162 GR
Q103 2SB1370 E
Q101 2SB1370 E
Q101, 103 ~104 CONST. VOLT. REG.
P-ON:12.4 P-OFF:12.4
VCC SW
Q106 2SC3266 GR
Q105 KTC3198 GR
Q104 KTC3198 GR
P-ON:11 P-OFF:0
P-ON:12 P-OFF:0
Q522 2SC2712 GR
Q521 2SC2712 GR
MS
IC602 BU4094 BC
DSP ON: 10.0
E AC C.B
F PT C.B
PT1
AC 230V 50HZ
SIGNAL:
PB/FM
REC/MW

IC602	
PIN5 B	PIN6 C
H	H
L	H
H	L
L	L
L	L

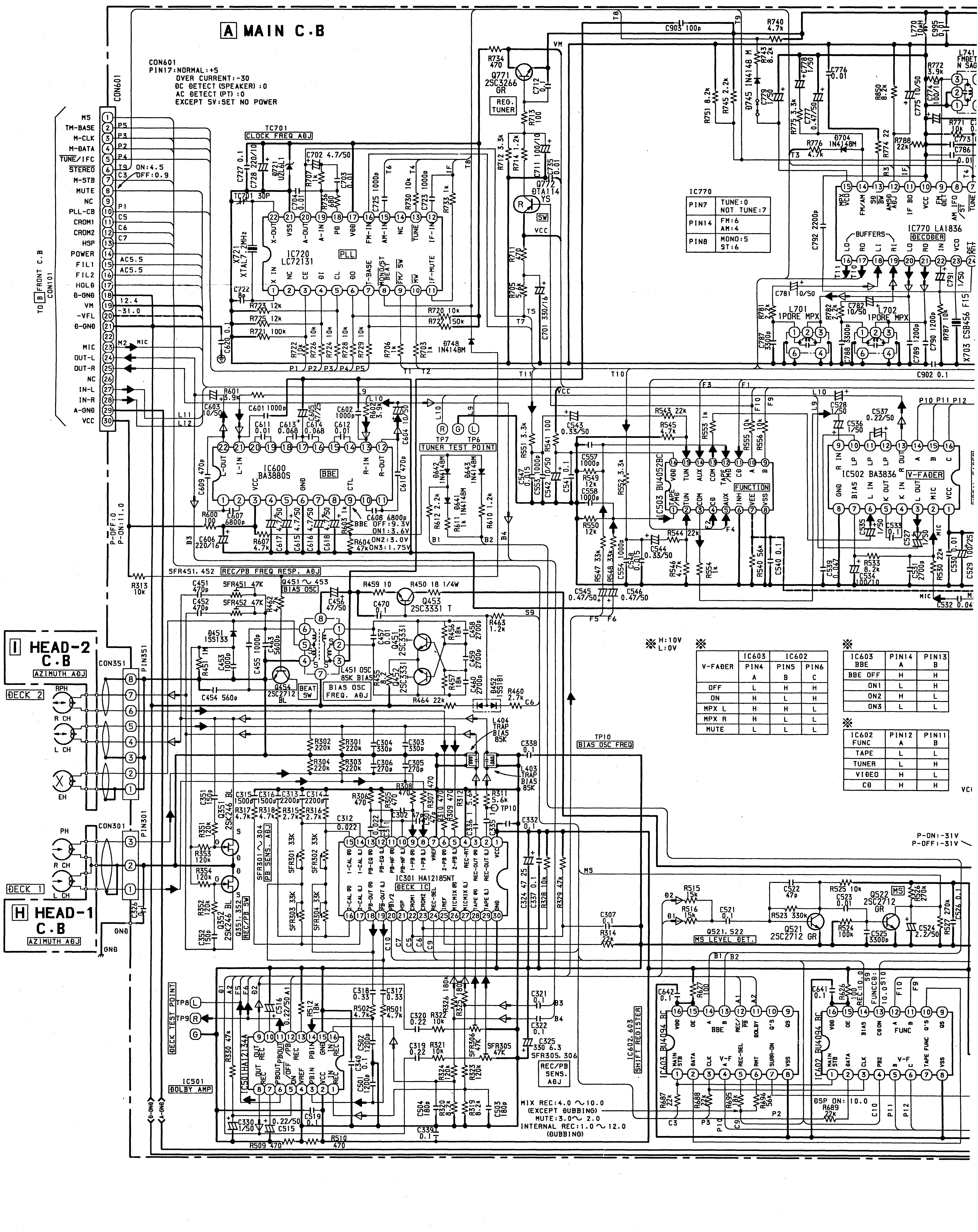
※

IC603 BBE	PIN14 A	PIN13 B
BBE OFF	H	H
ON1	L	H
ON2	H	L
ON3	L	L

※

IC602 FUNC	PIN12 A	PIN11 B
TAPE	L	L
TUNER	L	H
VIDEO	H	L
CD	H	H

SCHEMATIC DIAGRAM – 2 (MAIN : V)



A MAIN C.B
CON601
PIN17: NORMAL: +5
OVER CURRENT: -30
DC DETECT (SPEAKER): 0
AC DETECT (PT): 0
EXCEPT 5V: SET NO POWER
TO B FRONT C.B CON101
MS
TM-BASE
M-CLK
M-DATA
TUNE/IFC
STEREO
M-STB
MUTE
NC
PLL-CB
CROM1
CROM2
HSP
POWER
FIL1
FIL2
HOLD
D-GND
VM
-VFL
D-GND
MIC
OUT-L
OUT-R
NC
IN-L
IN-R
A-GND
VCC
ON: 4.5
OFF: 0.9
TC701 CLOCK FREQ ADJ
IC720 LC72131
PLL
X721 XTAL 7.2MHz
Q771 2SC3266 GR
REG. TUNER
Q772 DTA114 YS
SW
IC770
IC770 LA1836
DECODER
BUFFERS
L701 1PORE MPX
L702 1PORE MPX
IC600 BA3880S
BBE
BBE OFF: 9.3V
ON1: 3.6V
ON2: 3.0V
ON3: 1.75V
TP7 TP6 TUNER TEST POINT
IC503 BU4052BC
FUNCTION
IC502 BA3836
V-FADER
P-OFF: 0
P-ON: 11.0
SFR451, 452 REC/PB FREQ RESP. ADJ
Q451 ~ 453 BIAS OSC
Q453 2SC3331 T
Q451 2SC3331
Q452 2SC3331
Q454 2SC2712 BL
BEAT SW
L451 OSC 85K BIAS
BIAS OSC FREQ. ADJ
L404 TRAP BIAS 85K
L403 TRAP BIAS 85K
TP10 BIAS OSC FREQ
I HEAD-2 C.B
AZIMUTH ADJ
CON351
PIN351
DECK 2
RPH
R CH
L CH
EH
DECK 1
PH
H HEAD-1 C.B
AZIMUTH ADJ
CON301
PIN301
Q351, 352 REC/PB SW
Q351 2SK246 BL
Q352 2SK246 BL
SFR301 ~ 304 PB SENS. ADJ
IC301 HA12185NT
DECK IC
MS
Q521, 522 MS LEVEL DET.
Q521 2SC2712 GR
Q522 2SC2712 GR
DECK TEST POINT
TP8 L
TP9 R
G
IC501 DOLBY AMP
IC501 HA12134A
SFR305, 306 REC/PB SENS. ADJ
MIX REC: 4.0 ~ 10.0 (EXCEPT DUBBING)
MUTE: 3.0 ~ 2.0
INTERNAL REC: 1.0 ~ 12.0 (DUBBING)
IC602, 603 SHIFT REGISTER
IC603 BU4094 BC
IC602 BU4094 BC
DSP ON: 10.0
P-ON: -31V
P-OFF: -31V
GND

※ H: 10V
L: 0V

※

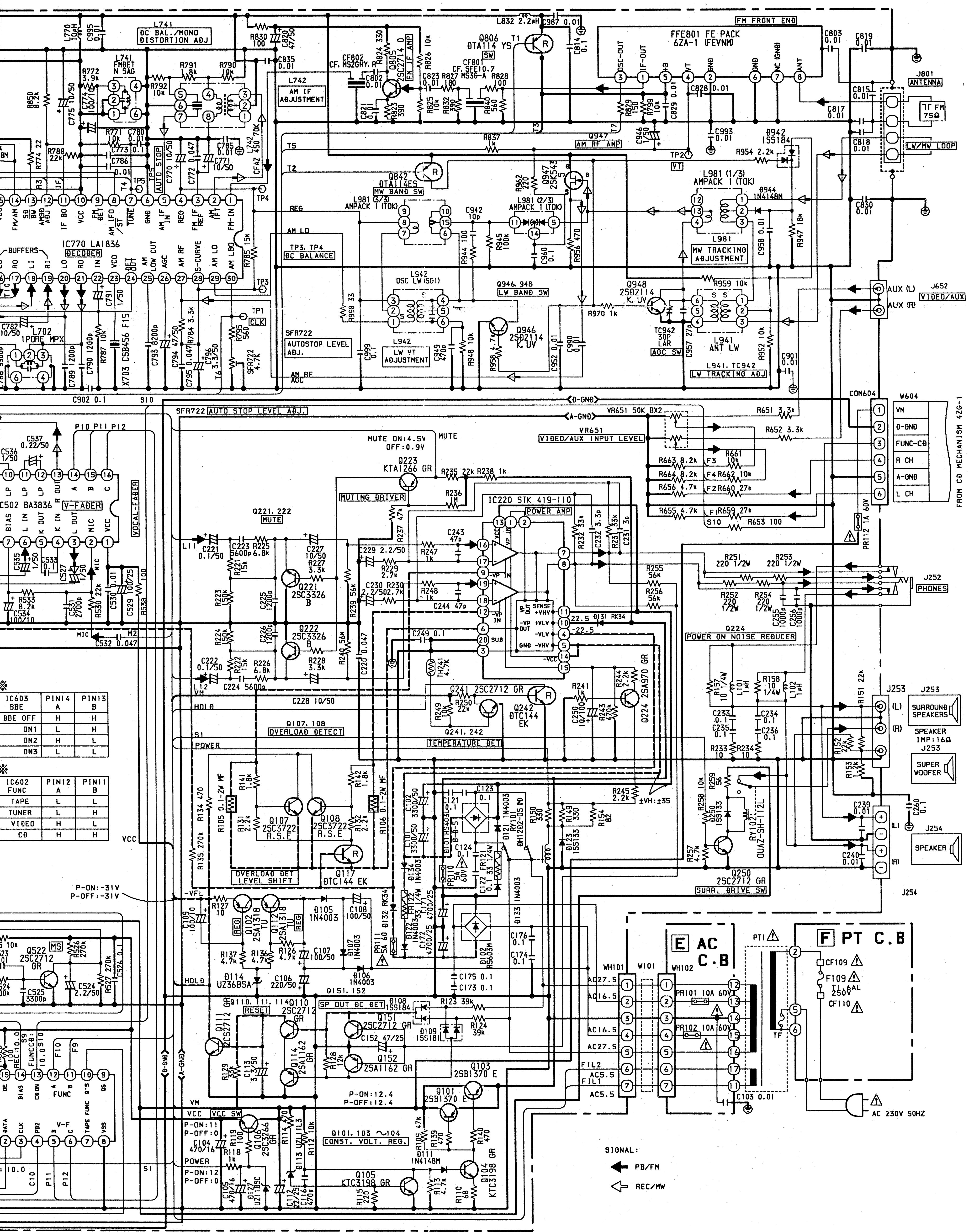
V-FADER	IC603	IC602	
	PIN4 A	PIN5 B	PIN6 C
OFF	L	H	H
ON	H	L	H
MPX L	H	H	L
MPX R	H	L	L
MUTE	L	L	L

※

IC603 BBE	PIN14 A	PIN13 B
BBE OFF	H	H
ON1	L	H
ON2	H	L
ON3	L	L

※

IC602 FUNC	PIN12 A	PIN11 B
TAPE	L	L
TUNER	L	H
VIDEO	H	L
CD	H	H



※

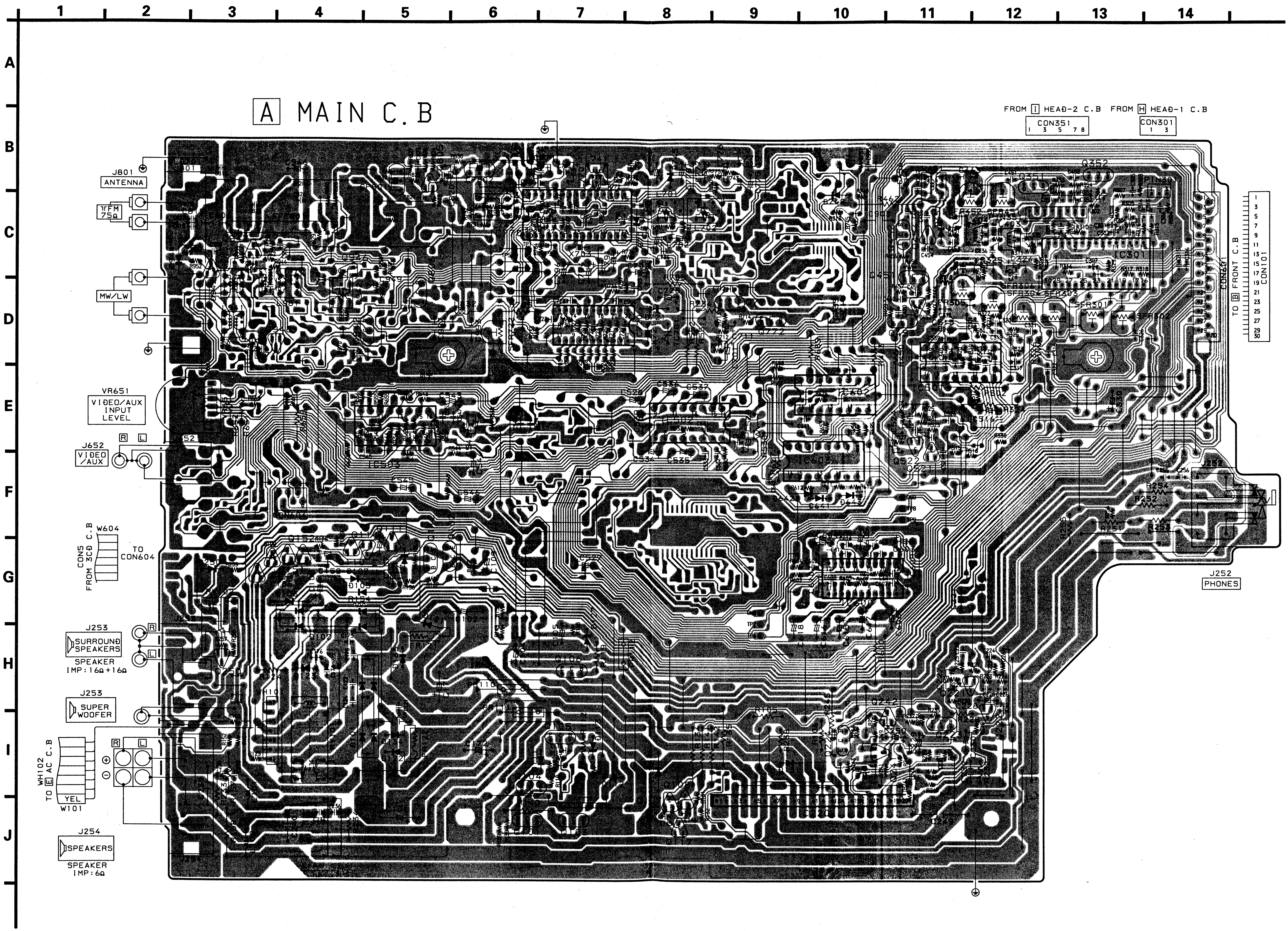
IC603 BBE	PIN14 A	PIN13 B
BBE OFF	H	H
ON1	L	H
ON2	H	L
ON3	L	L

※

IC602 FUNC	PIN12 A	PIN11 B
TAPE	L	L
TUNER	L	H
VIDEO	H	L
CD	H	H

FM FRONT END
FFE801 FE PACK
6ZA-1 (FEVNM)
L741
DC BAL./MONO
DISTORTION ADJ
L742
AM IF
ADJUSTMENT
Q805 2SC2714 O
FM IF AMP
Q806 DTA114 YS
SW
J801
ANTENNA
FM 75Ω
LW/MW LOOP
Q947 2SK543
AM RF AMP
Q842 DTA114ES
MW BAND SW
L981 (3/3) AMPACK 1 (TOK)
L981 (2/3) AMPACK 1 (TOK)
L981 (1/3) AMPACK 1 (TOK)
L981
MW TRACKING
ADJUSTMENT
IC770 LA1836
DECODER
BUFFERS
TP3, TP4
DC BALANCE
TP5
AUTO STOP
TP1
CLK
L942
OSC LW (SG1)
L942
LW VT
ADJUSTMENT
SFR722
AUTOSTOP LEVEL
ADJ.
Q946, 948
LW BAND SW
Q946 2SD2114 K UV
Q948 2SD2114 K UV
TC942 30P LAR
AGC SW
L941 ANT LW
L941, TC942
LW TRACKING ADJ
L702 1PORE MPX
X703 CSB456 F15
SFR722 AUTO STOP LEVEL ADJ.
VR651 50K BX2
VR651
VIDEO/AUX INPUT LEVEL
J652
AUX (L)
AUX (R)
VIDEO/AUX
CON604
W604
VM
D-GND
FUNC-CD
R CH
A-GND
L CH
FROM CD MECHANISM 4ZG-1
IC502 BA3836
V-FADER
VOCAL-FADER
MUTE ON:4.5V
OFF:0.9V
MUTE
Q223 KTA1266 GR
MUTING DRIVER
IC220 STK 419-110
POWER AMP
Q221, 222
MUTE
Q221 2SC3326 B
Q222 2SC3326 B
Q107, 108
OVERLOAD DETECT
Q241 2SC2712 GR
Q242 DTC144 EK
Q241, 242
TEMPERATURE DET
Q224 2SA970 GR
Q224
POWER ON NOISE REDUCER
J252
PHONES
J253
SURROUND SPEAKERS
SPEAKER IMP:16Ω
SUPER WOOFER
J254
SPEAKER
Q250 2SC2712 GR
SURR. DRIVE SW
RY102 QUAZ-SH-112L
RY101 DH1202-DS (M)
Q107 2SC3722 R.S.E
Q108 2SC3722 R.S.E
OVERLOAD DET
LEVEL SHIFT
Q117 DTC144 EK
P-ON:-31V
P-OFF:-31V
Q102 2SA1318 TU
Q151 2SA1318 TU
REG
D105 1N4003
D114 UZ36BSA
Q110, 111, 114
RESET
Q110 2SC2712 GR
Q111 2SC2712
Q114 2SA1162 GR
Q151, 152
SP OUT DC DET
Q151 2SC2712 GR
Q152 2SA1162 GR
Q103 2SB1370 E
Q101 2SB1370 E
P-ON:12.4
P-OFF:12.4
Q101, 103 ~104
CONST. VOLT. REG.
Q104 KTC3198 GR
Q105 KTC3198 GR
Q106 2SC3266
VCC SW
P-ON:11
P-OFF:0
POWER
P-ON:12
P-OFF:0
HOLD
E AC C.B
F PT C.B
WH101
W101
WH102
PR101 10A 60V
PR102 10A 60V
PT1
TF
CF109
F109 T1.6AL 250V
CF110
C103 0.01
AC 230V 50HZ
SIGNAL:
PB/FM
REC/MW

WIRING – 2 (MAIN : V)


1
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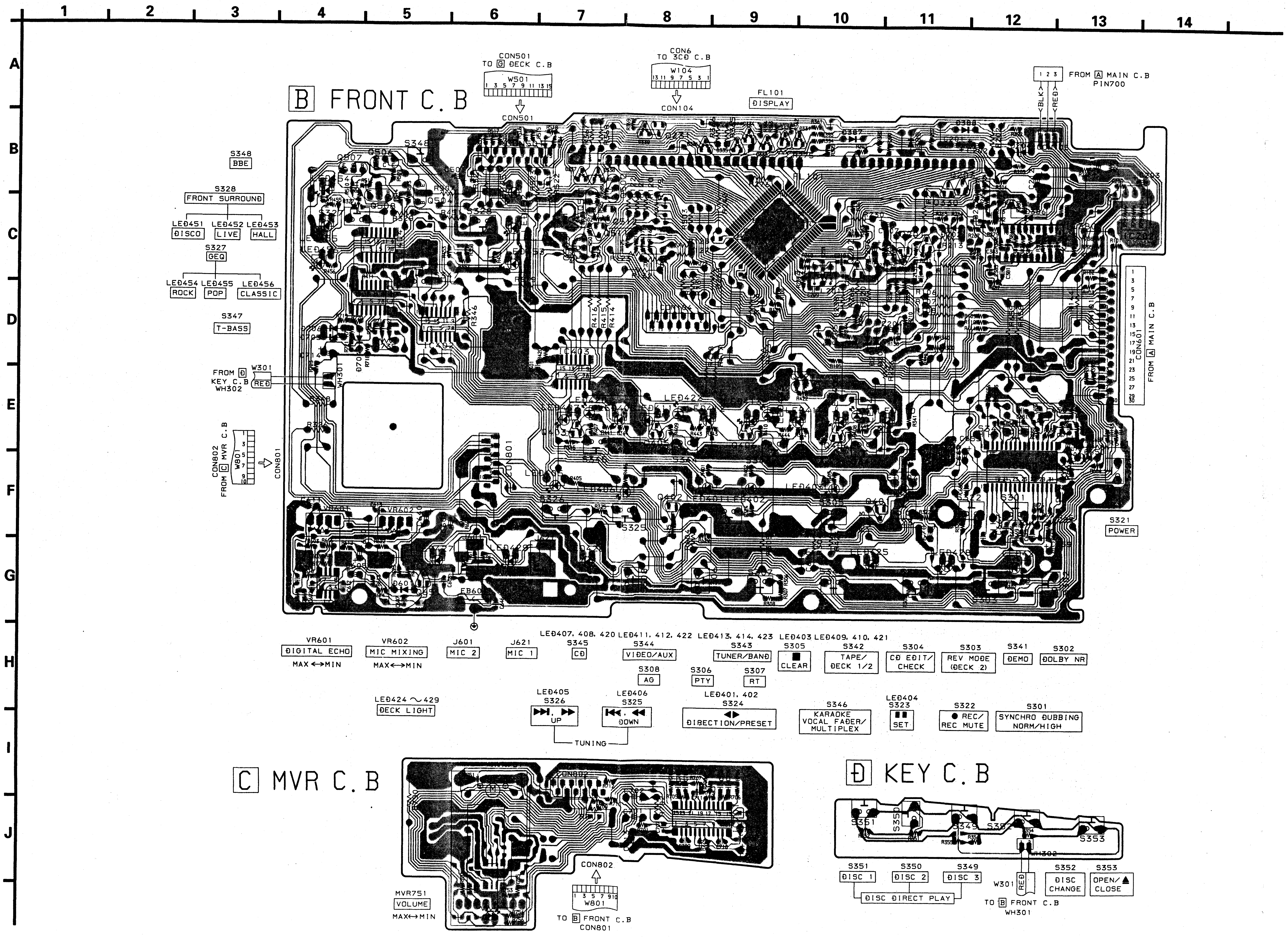
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
FROM I HEAD-2 C.B
CON351
1 3 5 7 8
FROM H HEAD-1 C.B
CON301
1 3
J801
ANTENNA
FM 75Ω
MW/LW
VR651
VIDEO/AUX INPUT LEVEL
J652
VIDEO /AUX
R
L
W604
CON5 FROM 3CD C.B
TO CON604
J253
SURROUND SPEAKERS
SPEAKER IMP: 16Ω+16Ω
J253
SUPER WOOFER
WH102 TO E AC C.B
YEL
W101
J254
SPEAKERS
SPEAKER IMP: 6Ω
TO B FRONT C.B
CON101
CON201
J252
PHONES
IC301
Q352
SFR301
SFR302
SFR303
SFR304
IC502
IC503
IC601
Q522
Q521
R254
R252
R251
R253
Q152
D101
D102
D104
Q247
R105

WIRING – 3 (FRONT : EZ)


1
2
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7
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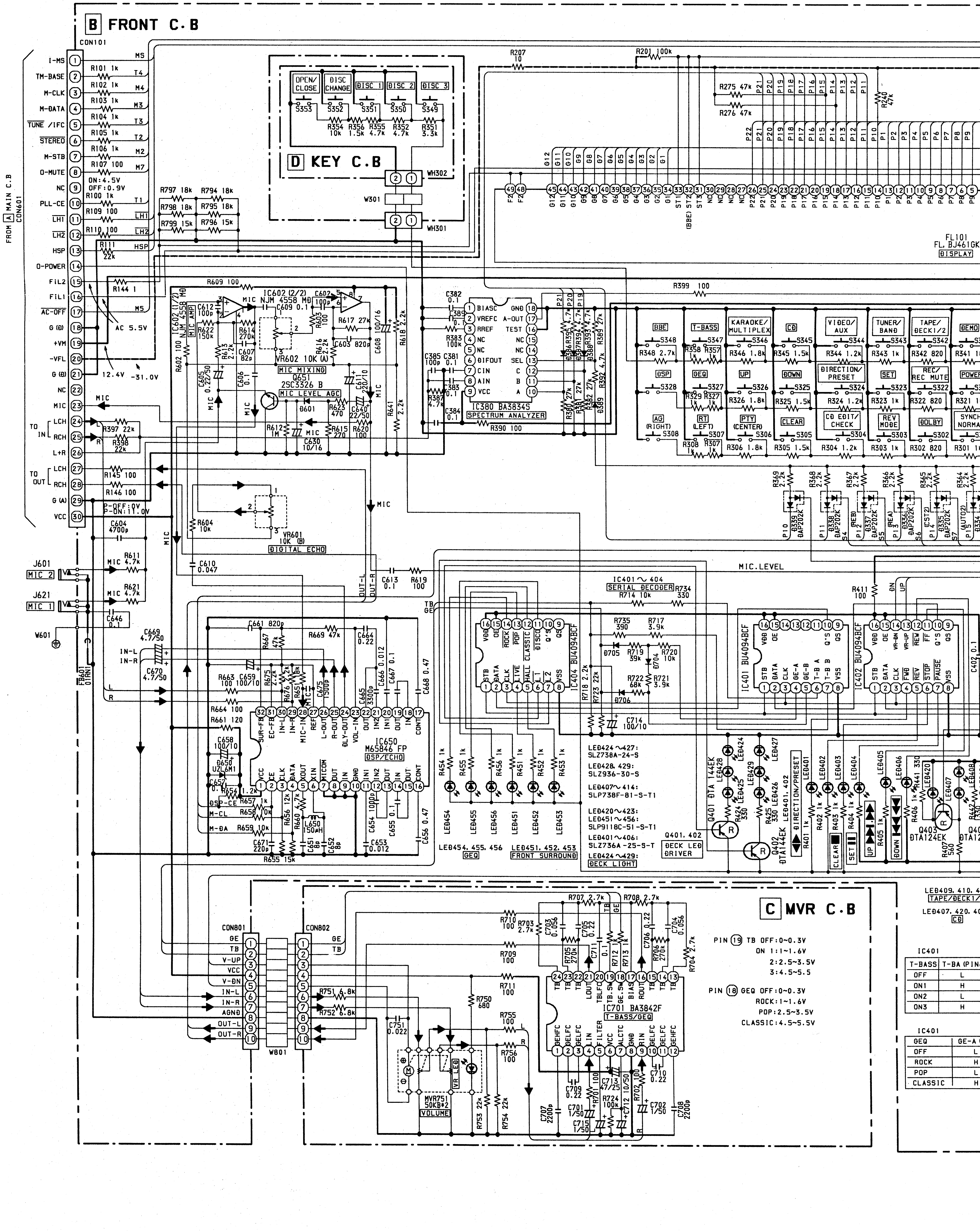
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
B FRONT C.B
C MVR C.B
Đ KEY C.B
CON501
TO G ĐECK C.B
W501
CON501
CON6
TO 3CĐ C.B
W104
CON104
FL101
ĐISPLAY
FROM A MAIN C.B
PIN700
BLK
RED
CON601
FROM A MAIN C.B
S348
BBE
S328
FRONT SURROUNĐ
LEĐ451
ĐISCO
LEĐ452
LIVE
LEĐ453
HALL
S327
GEQ
LEĐ454
ROCK
LEĐ455
POP
LEĐ456
CLASSIC
S347
T-BASS
FROM Đ KEY C.B WH302
W301
REĐ
CON802
FROM C MVR C.B
W801
CON801
S321
POWER
VR601
ĐIGITAL ECHO
MAX ←→ MIN
VR602
MIC MIXING
MAX ←→ MIN
J601
MIC 2
J621
MIC 1
LEĐ407, 408, 420
S345
CĐ
LEĐ411, 412, 422
S344
VIĐEO/AUX
LEĐ413, 414, 423
S343
TUNER/BANĐ
LEĐ403
S305
■
CLEAR
LEĐ409, 410, 421
S342
TAPE/ ĐECK 1/2
S304
CĐ EĐIT/ CHECK
S303
REV MOĐE (ĐECK 2)
S341
ĐEMO
S302
ĐOLBY NR
S308
AG
S306
PTY
S307
RT
LEĐ424 ~ 429
ĐECK LIGHT
LEĐ405
S326
▶▶I, ▶▶
UP
LEĐ406
S325
I◀◀, ◀◀
ĐOWN
TUNING
LEĐ401, 402
S324
◀▶
ĐIRECTION/PRESET
S346
KARAOKE VOCAL FAĐER/ MULTIPLEX
LEĐ404
S323
❚❚
SET
S322
● REC/ REC MUTE
S301
SYNCHRO ĐUBBING NORM/HIGH
CON802
W801
TO B FRONT C.B CON801
MVR751
VOLUME
MAX ←→ MIN
S351
S350
S349
S352
S353
WH302
S351
ĐISC 1
S350
ĐISC 2
S349
ĐISC 3
ĐISC ĐIRECT PLAY
W301
REĐ
TO B FRONT C.B WH301
S352
ĐISC CHANGE
S353
OPEN/▲ CLOSE

SCHEMATIC DIAGRAM-3 (FRONT: EZ)


B FRONT C.B
CON101
FROM A MAIN C.B CON601
I-MS
TM-BASE
M-CLK
M-DATA
TUNE /IFC
STEREO
M-STB
O-MUTE
NC
PLL-CE
LH1
LH2
HSP
O-POWER
FIL2
FIL1
AC-OFF
G (D)
+VM
-VFL
G (D)
NC
MIC
TO IN LCH RCH
L+R
TO OUT LCH RCH
G (A)
VCC
AC 5.5V
12.4V -31.0V
P-OFF:0V
P-ON:11.0V
ON:4.5V
OFF:0.9V
D KEY C.B
OPEN/CLOSE
DISC CHANGE
DISC 1
DISC 2
DISC 3
W301
WH301
WH302
IC602 (1/2) NJM 4558 MD
MIC AMP
IC602 (2/2) NJM 4558 MD
VR602 10K (A)
MIC MIXING
Q651 2SC3326 B
MIC LEVEL AGC
VR601 10K (B)
DIGITAL ECHO
J601 MIC 2
J621 MIC 1
W601
FB601 01RN1
IC650 M65846 FP
DSP/ECHO
IC380 BA3834S
SPECTRUM ANALYZER
IC404 BU4094BCF
IC401 BU4094BCF
IC402 BU4094BCF
IC401～404 SERIAL DECODER
MIC.LEVEL
FL101 FL BJ461GK
DISPLAY
BBE
T-BASS
KARAOKE/MULTIPLEX
CD
VIDEO/AUX
TUNER/BAND
TAPE/DECK1/2
DEMO
DSP
GEQ
UP
DOWN
DIRECTION/PRESET
SET
REC/REC MUTE
POWER
AG (RIGHT)
RT (LEFT)
PTY (CENTER)
CLEAR
CD EDIT/CHECK
REV MODE
DOLBY
SYNCH NORMAL
LED424～427: SLZ738A-24-S
LED428 429: SLZ936-30-S
LED407～414: SLP738F-81-S-T1
LED420～423: LED451～456: SLP9118C-51-S-T1
LED401～406: SLZ736A-25-S-T
LED424～429: DECK LIGHT
LED454. 455. 456 GEQ
LED451. 452. 453 FRONT SURROUND
Q401. 402 DECK LED DRIVER
Q401 DTA 144EK
Q402 DTA144EK
Q403 DTA124EK
LED401. 402 DIRECTION/PRESET
LED409. 410. 4 TAPE/DECK1/
LED407. 420. 40 CD
C MVR C.B
CON801
CON802
W801
GE
TB
V-UP
VCC
V-DN
IN-L
IN-R
AGND
OUT-L
OUT-R
MVR751 50KB*2
VOLUME
VR LED
IC701 BA3842F
T-BASS/GEQ

PIN ⑲ TB OFF:0~0.3V
ON 1:1~1.6V
2:2.5~3.5V
3:4.5~5.5

PIN ⑱ GEQ OFF:0~0.3V
ROCK:1~1.6V
POP:2.5~3.5V
CLASSIC:4.5~5.5V

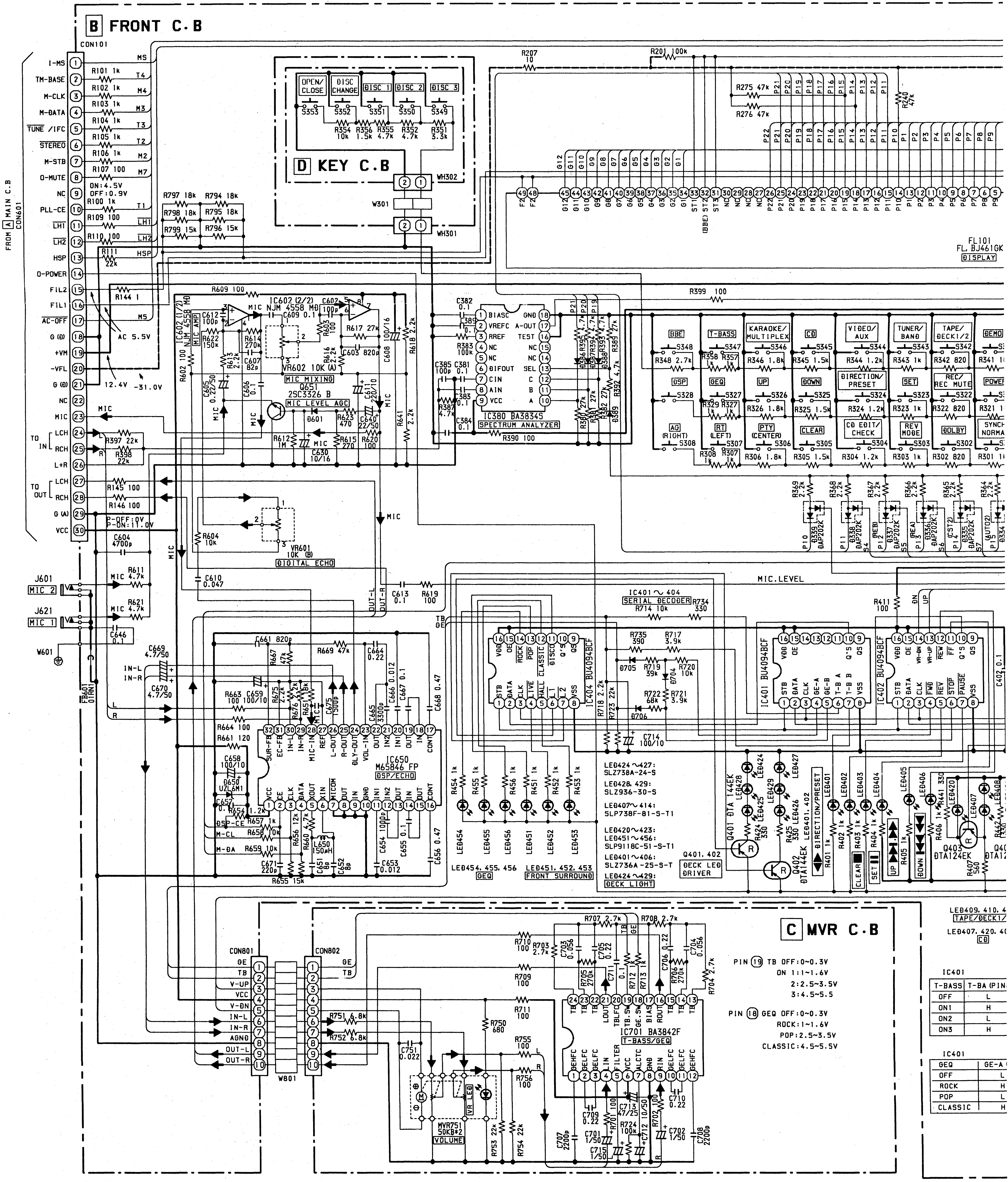
IC401

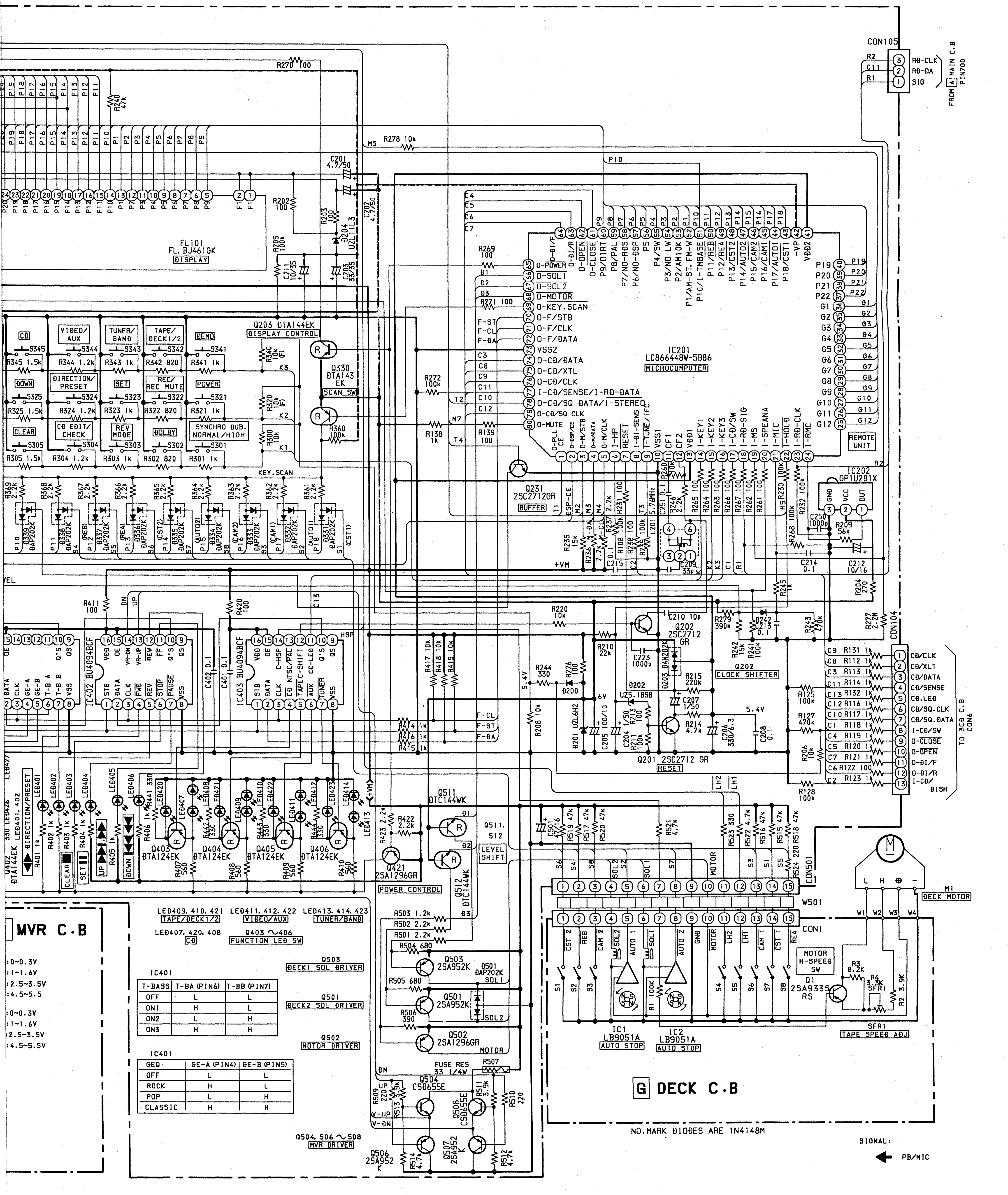
T-BASS	T-BA (PIN
OFF	L
ON1	H
ON2	L
ON3	H

IC401

GEQ	GE-A
OFF	L
ROCK	H
POP	L
CLASSIC	H

SCHEMATIC DIAGRAM – 3 (FRONT : EZ)


B FRONT C.B
CON101
FROM A MAIN C.B CON601
I-MS
TM-BASE
M-CLK
M-DATA
TUNE /IFC
STEREO
M-STB
D-MUTE
NC
PLL-CE
LH1
LH2
HSP
D-POWER
FIL2
FIL1
AC-OFF
G (D)
+VM
-VFL
G (D)
NC
MIC
TO IN LCH
RCH
L+R
TO OUT LCH
RCH
G (A)
VCC
ON:4.5V
OFF:0.9V
AC 5.5V
12.4V
-31.0V
P-OFF:0V
P-ON:11.0V
D KEY C.B
OPEN/CLOSE
DISC CHANGE
DISC 1
DISC 2
DISC 3
S353
S352
S351
S350
S349
WH302
W301
WH301
IC602 (2/2) MIC NJM 4558 MD
IC602 (1/2) NJM 4558 MD MIC AMP
VR602 10K (A)
MIC MIXING
Q651 2SC3326 B
MIC LEVEL AGC
VR601 10K (B)
DIGITAL ECHO
IC380 BA3834S
SPECTRUM ANALYZER
BIASC
VREFC
RREF
NC
DIFOUT
CIN
AIN
VCC
GND
A-OUT
TEST
SEL
FL101
FL BJ461GK
DISPLAY
BBE
T-BASS
KARAOKE/MULTIPLEX
CD
VIDEO/AUX
TUNER/BAND
TAPE/DECK1/2
DEMO
DSP
GEQ
UP
DOWN
DIRECTION/PRESET
SET
REC/REC MUTE
POWER
AG (RIGHT)
RT (LEFT)
PTY (CENTER)
CLEAR
CD EDIT/CHECK
REV MODE
DOLBY
SYNC NORMAL
MIC.LEVEL
J601 MIC 2
J621 MIC 1
W601
IC650 M65846 FP
DSP/ECHO
IC401~404
SERIAL DECODER
IC404 BU4094BCF
IC401 BU4094BCF
IC402 BU4094BCF
LED424~427: SLZ738A-24-S
LED428, 429: SLZ936-30-S
LED407~414: SLP738F-81-S-T1
LED420~423: LED451~456: SLP9118C-51-S-T1
LED401~406: SLZ736A-25-S-T
LED424~429: DECK LIGHT
LED454, 455, 456 GEQ
LED451, 452, 453 FRONT SURROUND
Q401, 402 DECK LED DRIVER
Q401 DTA144EK
Q402 DTA144EK
Q403 DTA124EK
LED409, 410, 4
TAPE/DECK1/
LED407, 420, 4
CD
C MVR C.B
CON801
CON802
GE
TB
V-UP
VCC
V-DN
IN-L
IN-R
AGND
OUT-L
OUT-R
W801
MVR751 50KB*2
VOLUME
VR LED
IC701 BA3842F
T-BASS/GEQ
PIN ⑲ TB OFF:0~0.3V
ON 1:1~1.6V
2:2.5~3.5V
3:4.5~5.5
PIN ⑱ GEQ OFF:0~0.3V
ROCK:1~1.6V
POP:2.5~3.5V
CLASSIC:4.5~5.5V
IC401
T-BASS | T-BA (PIN
OFF | L
ON1 | H
ON2 | L
ON3 | H
IC401
GEQ | GE-A
OFF | L
ROCK | H
POP | L
CLASSIC | H


CON105
RD-CLK
RD-DA
SIG
FROM A MAIN C.B PIN700
FL101
FL BJ461GK
DISPLAY
IC201
LC866448W-5B86
MICROCOMPUTER
Q203 DTA144EK
DISPLAY CONTROL
Q330 DTA143EK
SCAN SW
Q231 2SC2712GR
BUFFER
IC202 GP1U281X
REMOTE UNIT
CD
VIDEO/AUX
TUNER/BAND
TAPE/DECK1/2
DEMO
DOWN
DIRECTION/PRESET
SET
REC/REC MUTE
POWER
CLEAR
CD EDIT/CHECK
REV MODE
DOLBY
SYNCHRO DUB. NORMAL/HIGH
KEY.SCAN
IC402 BU4094BCF
IC403 BU4094BCF
Q202 2SC2712GR
CLOCK SHIFTER
Q201 2SC2712 GR
RESET
CON104
CD/CLK
CD/XLT
CD/DATA
CD/SENSE
CD.LED
CD/SQ.CLK
CD/SQ.DATA
I-CD/SW
O-CLOSE
O-OPEN
O-DI/F
O-DI/R
I-CD/DISH
TO 3CD C.B CON6
Q511 DTC144WK
Q511, 512
LEVEL SHIFT
Q421 2SA1296GR
POWER CONTROL
Q403～Q406 DTA124EK
Q503 2SA952K
DECK1 SOL DRIVER
Q501 2SA952K
DECK2 SOL DRIVER
Q502 2SA1296GR
MOTOR DRIVER
Q504 CSD655E
Q508 CSD655E
Q506 2SA952
Q507 2SA952
Q504, 506～508
MVR DRIVER
FUSE RES 33 1/4W
CON501
W501
CON1
M1
DECK MOTOR
MOTOR H-SPEED SW
Q1 2SA933S RS
SFR1
TAPE SPEED ADJ
IC1 LB9051A
AUTO STOP
IC2 LB9051A
AUTO STOP
LED409, 410, 421
TAPE/DECK1/2
LED411, 412, 422
VIDEO/AUX
LED413, 414, 423
TUNER/BAND
LED407, 420, 408
CD
Q403 ～406
FUNCTION LED SW
MVR C.B
G DECK C.B
:0~0.3V
:1~1.6V
:2.5~3.5V
:4.5~5.5
:0~0.3V
:1~1.6V
:2.5~3.5V
:4.5~5.5V
SIGNAL:
PB/MIC

IC401

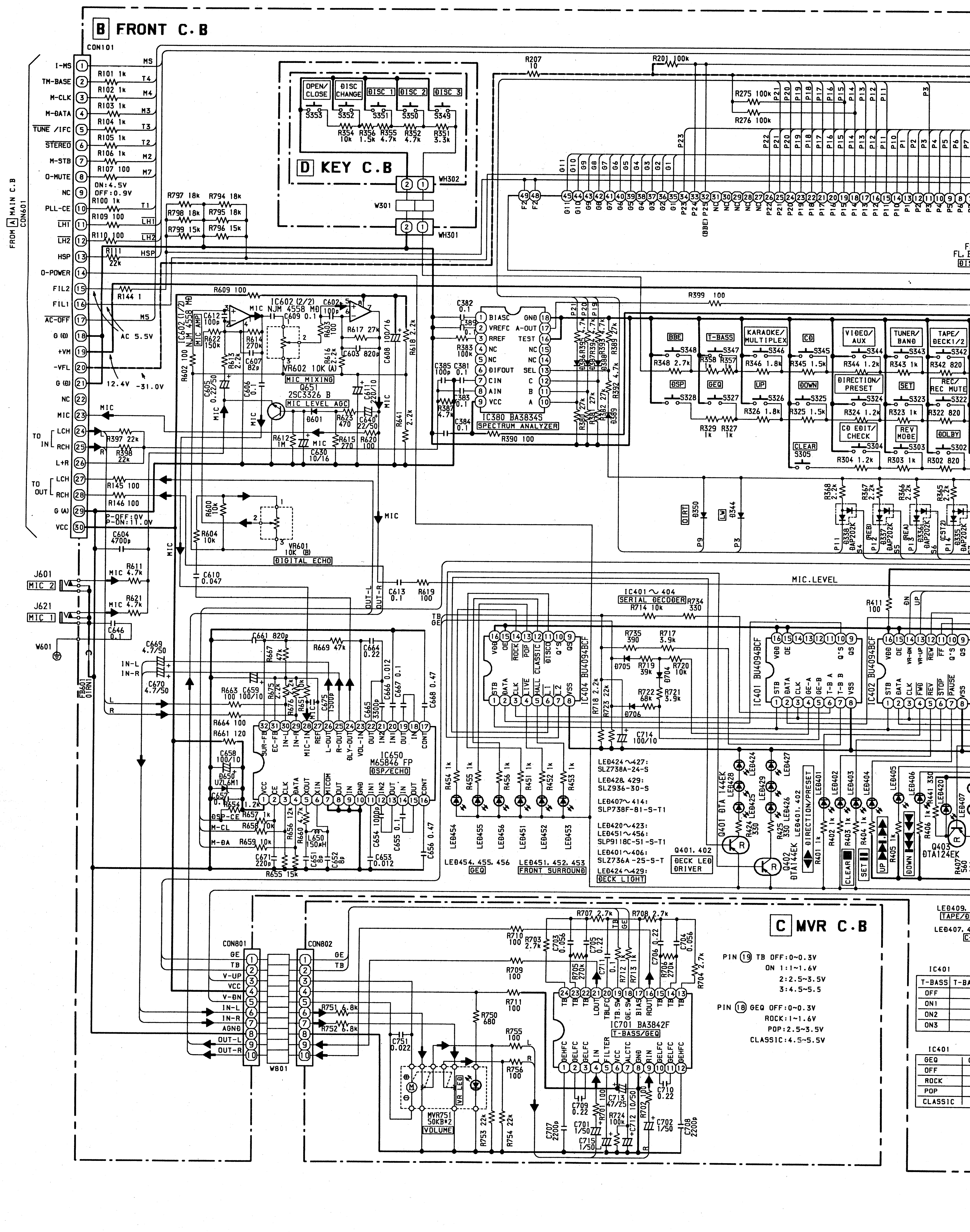
T-BASS	T-BA (PIN6)	T-BB (PIN7)
OFF	L	L
ON1	H	L
ON2	L	H
ON3	H	H

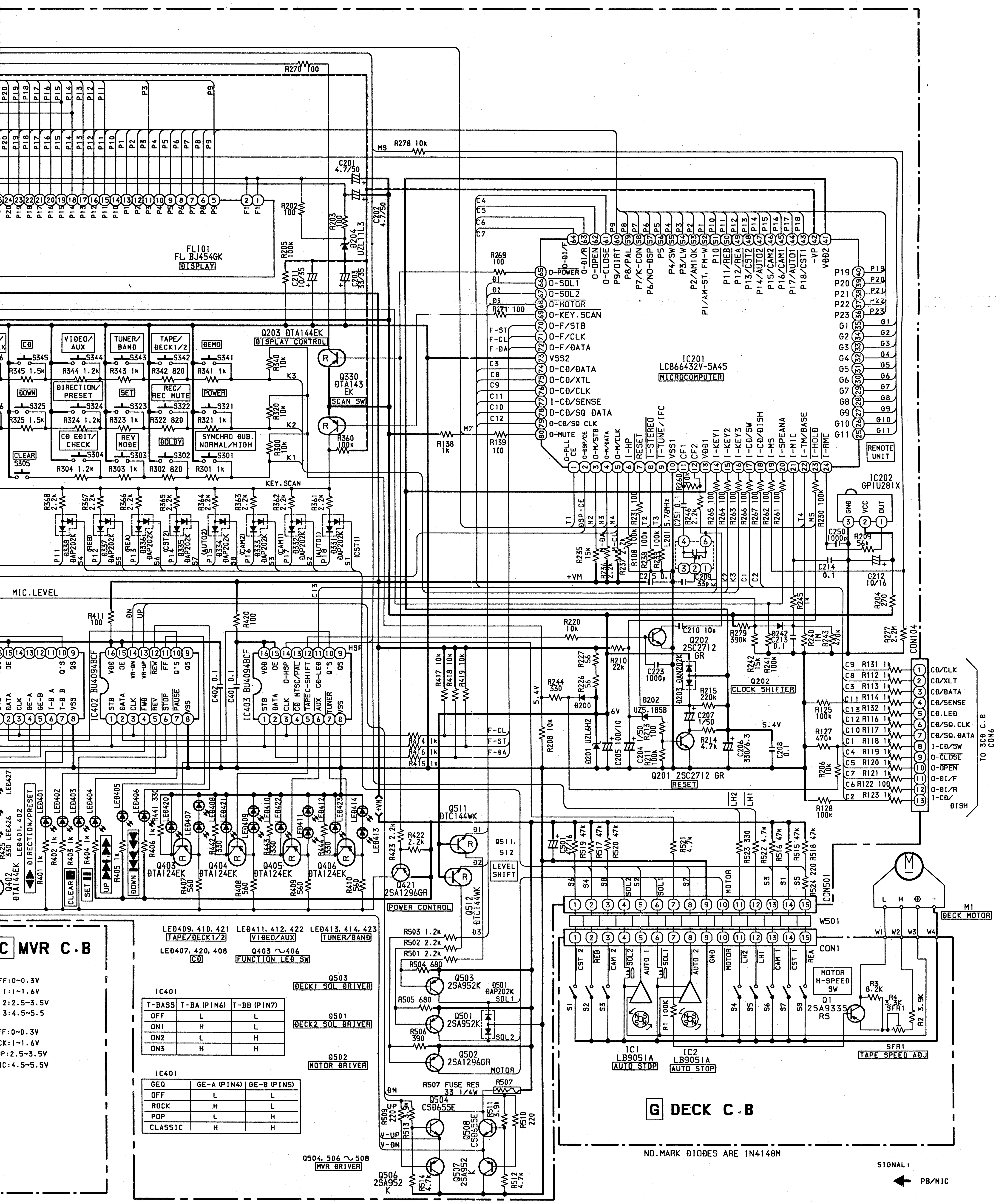
IC401

GEQ	GE-A (PIN4)	GE-B (PIN5)
OFF	L	L
ROCK	H	L
POP	L	H
CLASSIC	H	H

NO. MARK DIODES ARE 1N4148M

SCHEMATIC DIAGRAM – 4 (FRONT : V)


B FRONT C.B
CON101
FROM A MAIN C.B CON601
I-MS
TM-BASE
M-CLK
M-DATA
TUNE /IFC
STEREO
M-STB
O-MUTE
NC
PLL-CE
LH1
LH2
HSP
O-POWER
FIL2
FIL1
AC-OFF
+VM
-VFL
MIC
TO IN LCH RCH
L+R
TO OUT LCH RCH
VCC
ON:4.5V OFF:0.9V
AC 5.5V
12.4V -31.0V
P-OFF:0V P-ON:11.0V
D KEY C.B
OPEN/CLOSE
DISC CHANGE
DISC 1
DISC 2
DISC 3
WH302
W301
WH301
IC602 (2/2) MIC NJM 4558 MD
IC602 (1/2) NJM 4558 MD MIC AMP
VR602 10K (A) MIC MIXING
Q651 2SC3326 B MIC LEVEL AGC
VR601 10K (B) DIGITAL ECHO
IC380 BA3834S SPECTRUM ANALYZER
IC650 M65846 FP DSP/ECHO
J601 MIC 2
J621 MIC 1
W601
IC401~404 SERIAL DECODER
IC404 BU4094BCF
IC401 BU4094BCF
IC402 BU4094BCF
BBE
T-BASS
KARAOKE/MULTIPLEX
CD
VIDEO/AUX
TUNER/BAND
TAPE/DECK1/2
DSP
GEQ
UP
DOWN
DIRECTION/PRESET
SET
REC/REC MUTE
CD EDIT/CHECK
REV MODE
DOLBY
CLEAR
MIC.LEVEL
LED424~427: SLZ738A-24-S
LED428, 429: SLZ936-30-S
LED407~414: SLP738F-81-S-T1
LED420~423: LED451~456: SLP9118C-51-S-T1
LED401~406: SLZ736A-25-S-T
LED424~429: DECK LIGHT
Q401, 402 DECK LED DRIVER
Q401 DTA 144EK
Q402 DTA144EK
Q403 DTA124EK
LED454, 455, 456 GEQ
LED451, 452, 453 FRONT SURROUND
C MVR C.B
CON801
CON802
GE
TB
V-UP
VCC
V-DN
IN-L
IN-R
AGND
OUT-L
OUT-R
W801
MVR751 50KB*2 VOLUME
VR LED
IC701 BA3842F T-BASS/GEQ
PIN ⑲ TB OFF:0~0.3V
ON 1:1~1.6V
2:2.5~3.5V
3:4.5~5.5
PIN ⑱ GEQ OFF:0~0.3V
ROCK:1~1.6V
POP:2.5~3.5V
CLASSIC:4.5~5.5V
IC401
T-BASS
OFF
ON1
ON2
ON3
IC401
GEQ
OFF
ROCK
POP
CLASSIC


FL101
FL BJ454GK
DISPLAY
Q203 DTA144EK
DISPLAY CONTROL
Q330 DTA143EK
SCAN SW
KEY.SCAN
IC201
LC866432V-5A45
MICROCOMPUTER
IC202
GP1U281X
REMOTE UNIT
Q202 2SC2712 GR
CLOCK SHIFTER
Q201 2SC2712 GR
RESET
CON104
TO 3CD C.B CON6
CD/CLK
CD/XLT
CD/DATA
CD/SENSE
CD.LED
CD/SQ.CLK
CD/SQ.DATA
I-CD/SW
O-CLOSE
O-OPEN
O-DI/F
O-DI/R
I-CD/DISH
MIC.LEVEL
IC402 BU4094BCF
IC403 BU4094BCF
VIDEO/AUX
TUNER/BAND
TAPE/DECK1/2
DEMO
DIRECTION/PRESET
SET
REC/REC MUTE
POWER
DOWN
CLEAR
CD EDIT/CHECK
REV MODE
DOLBY
SYNCHRO DUB. NORMAL/HIGH
Q402 DTA144EK
Q403 DTA124EK
Q404 DTA124EK
Q405 DTA124EK
Q406 DTA124EK
UP
DOWN
CLEAR
SET
Q511 DTC144WK
LEVEL SHIFT
Q512 DTC144WK
Q421 2SA1296GR
POWER CONTROL
C MVR C.B
OFF:0~0.3V
1:1~1.6V
2:2.5~3.5V
3:4.5~5.5
OFF:0~0.3V
CK:1~1.6V
P:2.5~3.5V
IC:4.5~5.5V
LED409, 410, 421
TAPE/DECK1/2
LED411, 412, 422
VIDEO/AUX
LED413, 414, 423
TUNER/BAND
LED407, 420, 408
CD
Q403 ~406
FUNCTION LED SW
Q503 2SA952K
DECK1 SOL DRIVER
Q501 2SA952K
DECK2 SOL DRIVER
Q502 2SA1296GR
MOTOR DRIVER
R507 FUSE RES 33 1/4W
Q504 CS0655E
Q508 CS0655E
Q506 2SA952 K
Q507 2SA952 K
Q504, 506 ~508
MVR DRIVER
CON501
W501
CON1
M1
DECK MOTOR
MOTOR H-SPEED SW
Q1 2SA933S RS
SFR1
TAPE SPEED ADJ
IC1 LB9051A
AUTO STOP
IC2 LB9051A
AUTO STOP
G DECK C.B
NO.MARK DIODES ARE 1N4148M
SIGNAL:
PB/MIC

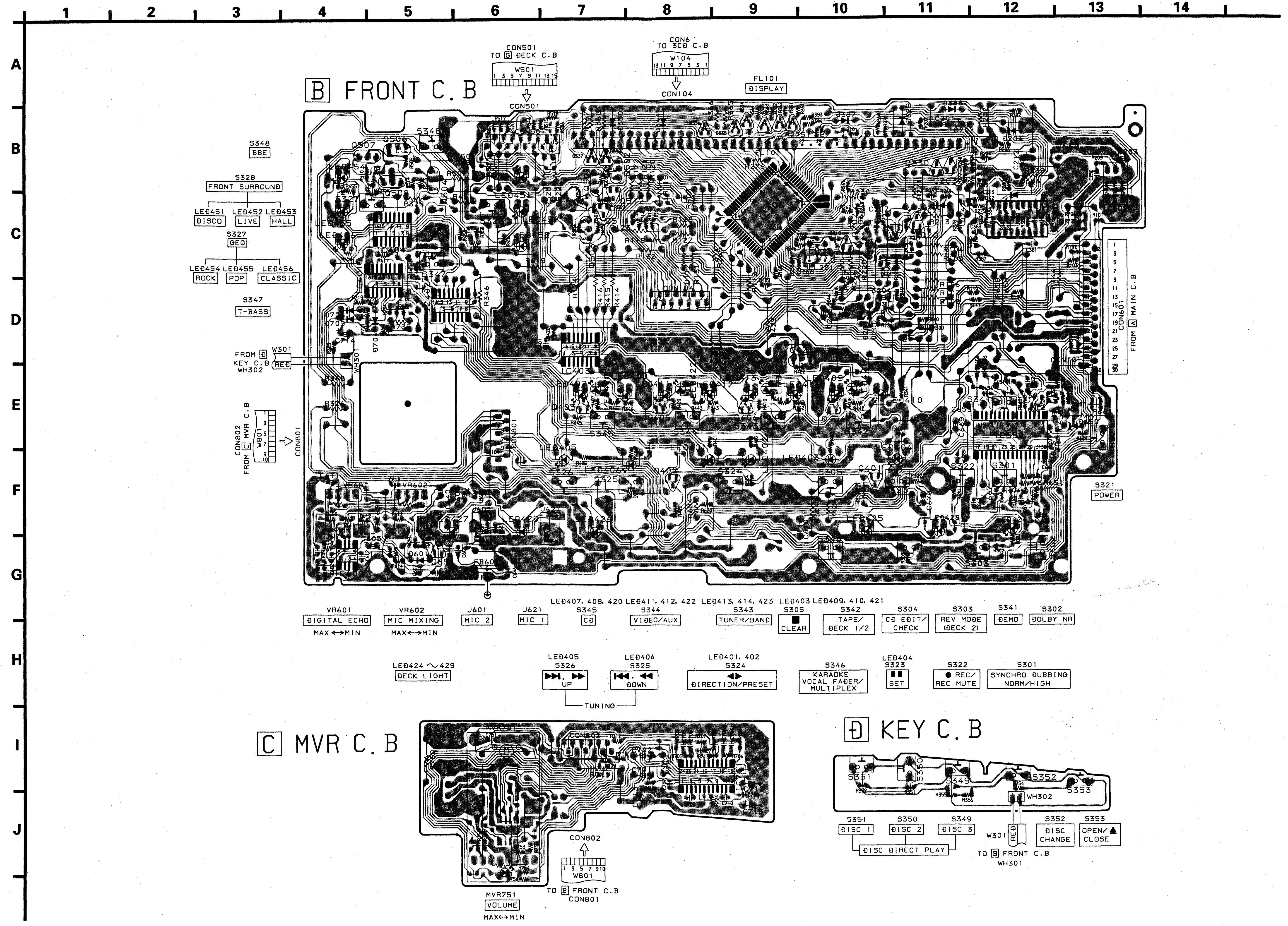
IC401

T-BASS	T-BA (PIN6)	T-BB (PIN7)
OFF	L	L
ON1	H	L
ON2	L	H
ON3	H	H

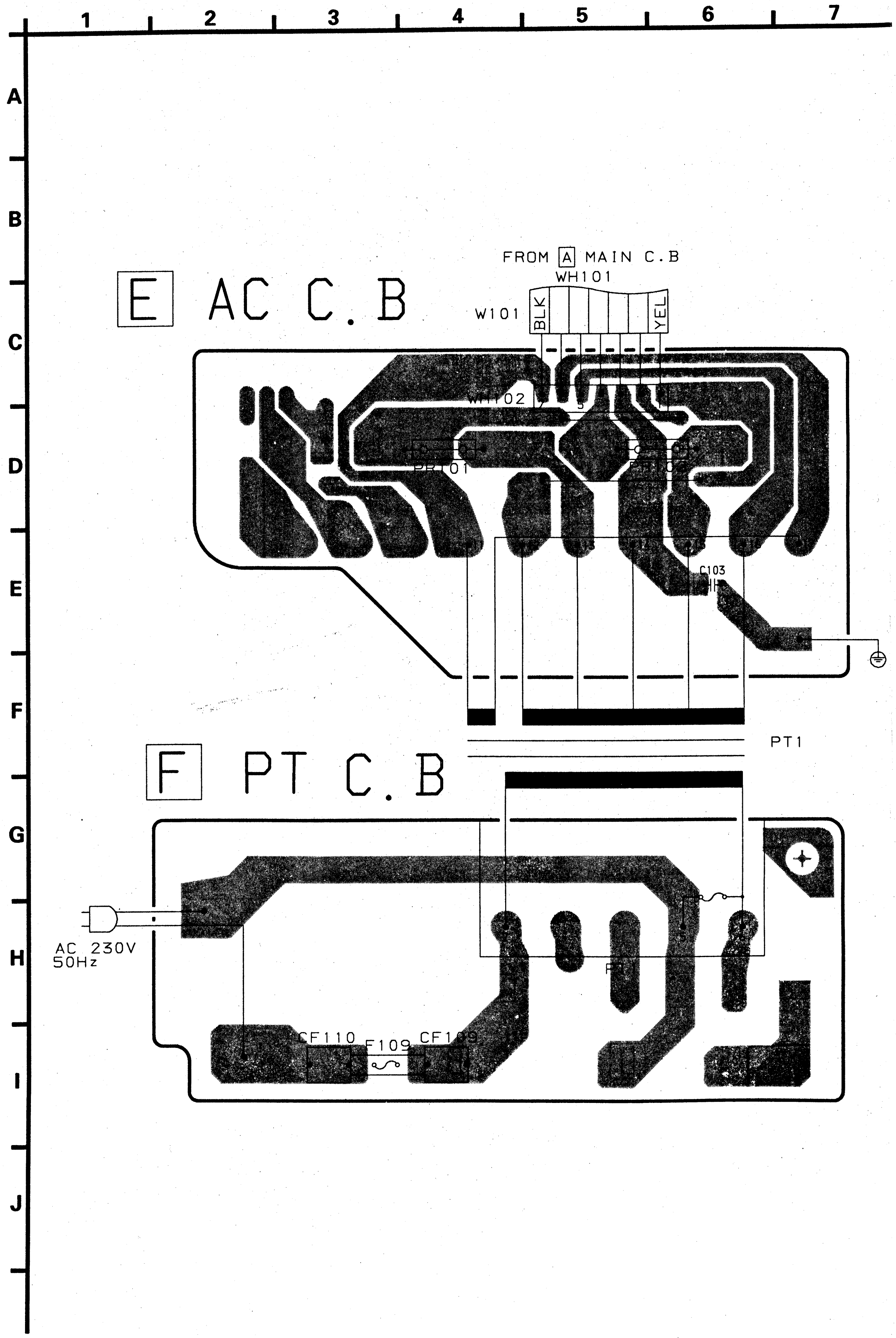
IC401

GEQ	GE-A (PIN4)	GE-B (PIN5)
OFF	L	L
ROCK	H	L
POP	L	H
CLASSIC	H	H

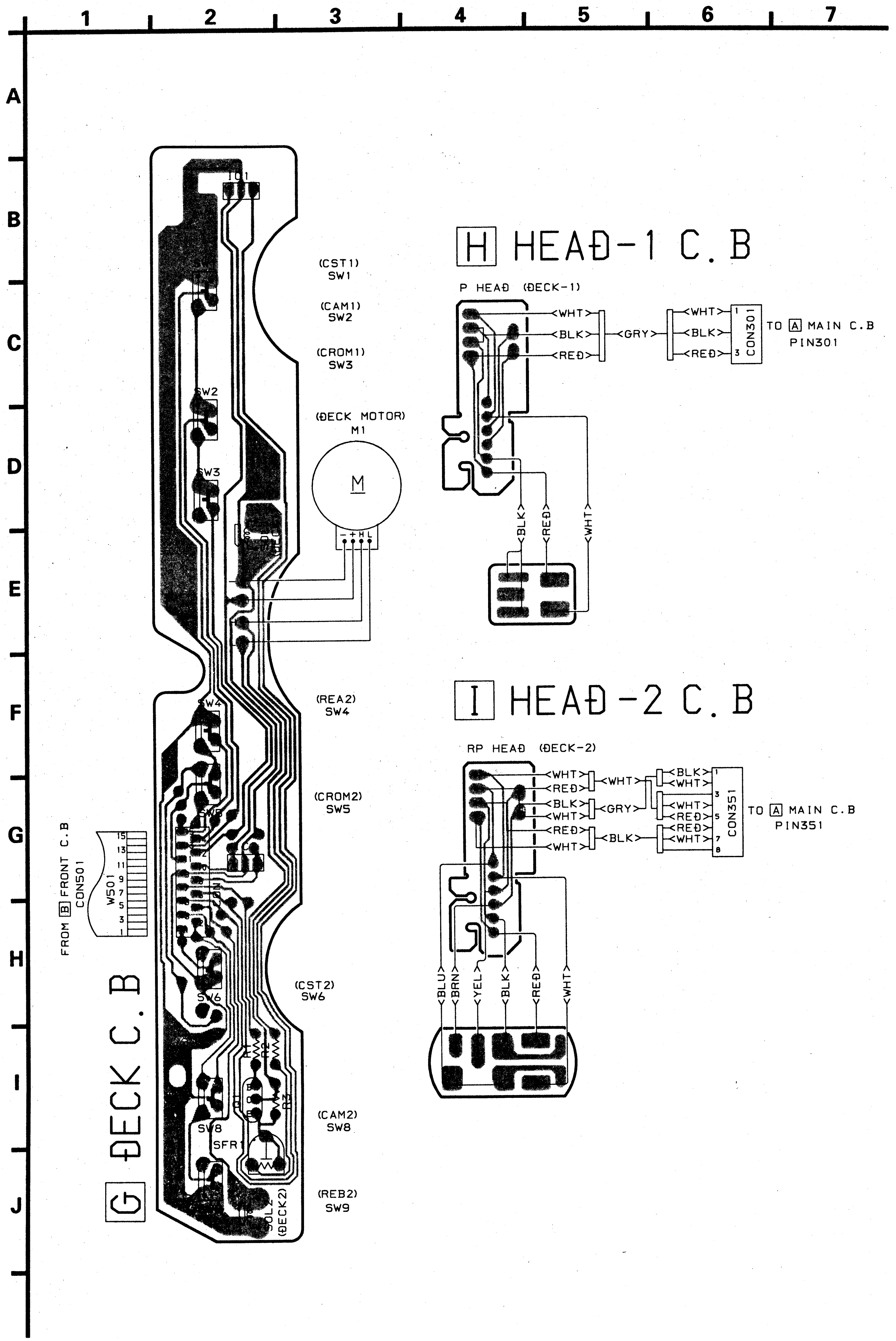
WIRING – 4 (FRONT : V)


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
B FRONT C.B
CON501
TO G DECK C.B
W501
1 3 5 7 9 11 13 15
CON501
CON6
TO 3CD C.B
W104
13 11 9 7 5 3 1
CON104
FL101
DISPLAY
S348
BBE
S328
FRONT SURROUND
LED451
DISCO
LED452
LIVE
LED453
HALL
S327
GEQ
LED454
ROCK
LED455
POP
LED456
CLASSIC
S347
T-BASS
FROM D
KEY C.B
WH302
W301
RED
CON802
FROM C MVR C.B
W801
CON801
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
30
CON601
FROM A MAIN C.B
S321
POWER
VR601
DIGITAL ECHO
MAX ⟷ MIN
VR602
MIC MIXING
MAX ⟷ MIN
J601
MIC 2
J621
MIC 1
LED407, 408, 420
S345
CD
LED411, 412, 422
S344
VIDEO/AUX
LED413, 414, 423
S343
TUNER/BAND
LED403
S305
■
CLEAR
LED409, 410, 421
S342
TAPE/
DECK 1/2
S304
CD EDIT/
CHECK
S303
REV MODE
(DECK 2)
S341
DEMO
S302
DOLBY NR
LED424 ～ 429
DECK LIGHT
LED405
S326
▶▶I, ▶▶
UP
LED406
S325
I◀◀, ◀◀
DOWN
TUNING
LED401, 402
S324
◀▶
DIRECTION/PRESET
S346
KARAOKE
VOCAL FADER/
MULTIPLEX
LED404
S323
▮▮
SET
S322
● REC/
REC MUTE
S301
SYNCHRO DUBBING
NORM/HIGH
C MVR C.B
CON802
1 3 5 7 9 10
W801
TO B FRONT C.B
CON801
MVR751
VOLUME
MAX ⟷ MIN
D KEY C.B
S351
DISC 1
S350
DISC 2
S349
DISC 3
DISC DIRECT PLAY
W301
RED
S352
DISC
CHANGE
S353
OPEN/▲
CLOSE
TO B FRONT C.B
WH301
WH302
IC201
IC403
Q401
Q402
Q403
Q404
Q504
Q507
VR601
VR602
S301
S305
S322
S324
S325
S326
S343
S345

WIRING – 5 (PT)

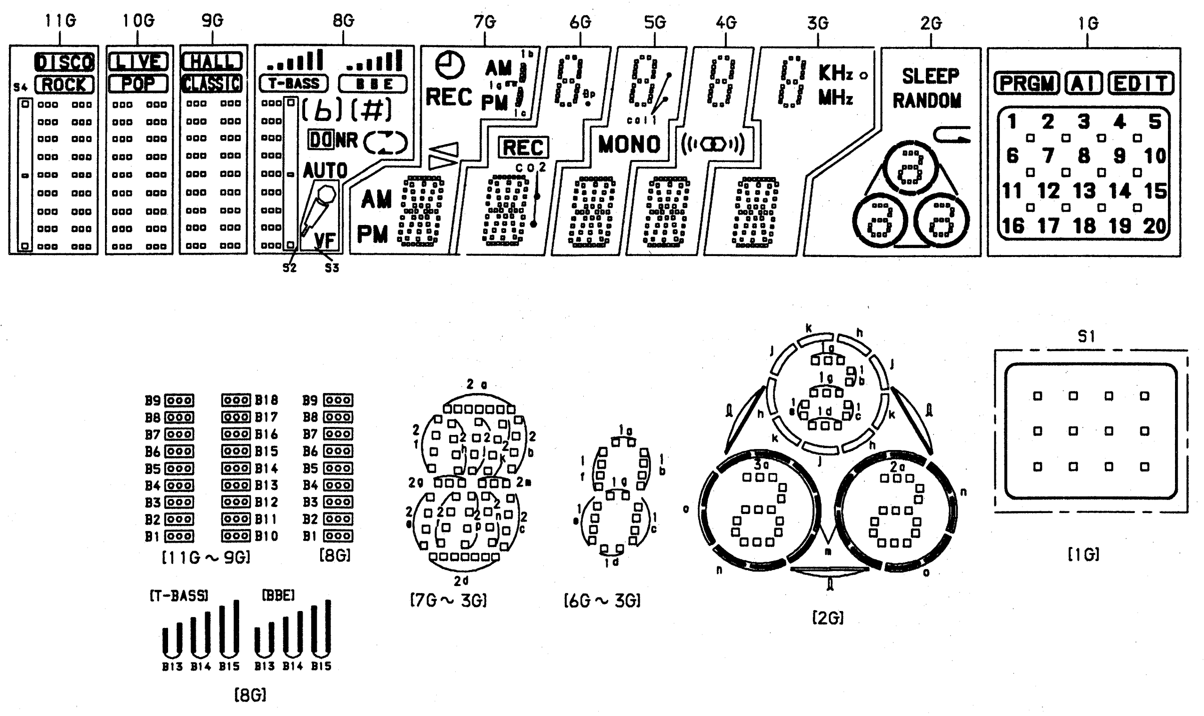

1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
E AC C.B
FROM A MAIN C.B
WH101
W101
BLK
YEL
WH102
PR101
PR102
C103
PT1
F PT C.B
AC 230V
50Hz
CF110
F109
CF109
P1

WIRING – 6 (DECK)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
G DECK C.B
FROM B FRONT C.B CON501
W501
15
13
11
9
7
5
3
1
T101
SW1
SW2
SW3
SW4
SW5
SW6
SW8
SFR1
SOL2 (DECK2)
(CST1) SW1
(CAM1) SW2
(CROM1) SW3
(DECK MOTOR) M1
M
(REA2) SW4
(CROM2) SW5
(CST2) SW6
(CAM2) SW8
(REB2) SW9
H HEAD-1 C.B
P HEAD (DECK-1)
<WHT>
<BLK>
<RED>
<GRY>
CON301
TO A MAIN C.B
PIN301
I HEAD-2 C.B
RP HEAD (DECK-2)
<WHT>
<RED>
<BLK>
<GRY>
CON351
TO A MAIN C.B
PIN351
<BLU>
<BRN>
<YEL>

FL GRID ASSIGNMENT / ANODE CONNECTION

FL, BJ454GK
GRID ASSIGNMENT

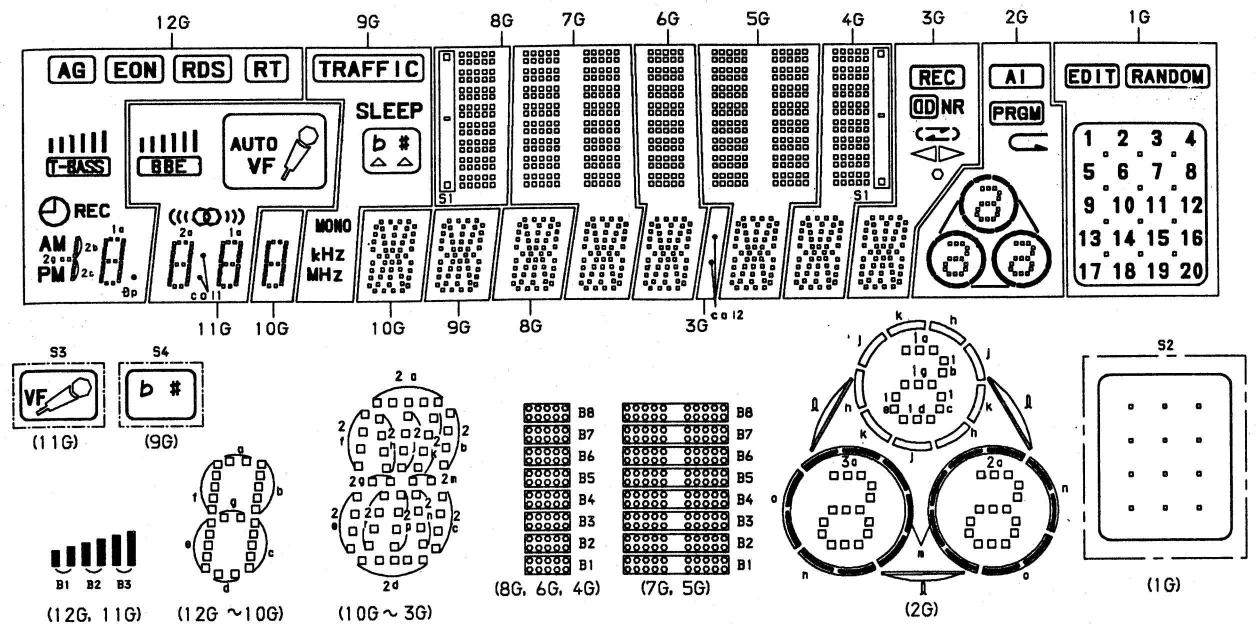


11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
DISCO
ROCK
LIVE
POP
HALL
CLASSIC
T-BASS
BBE
DD NR
AUTO
VF
AM
PM
REC
MONO
KHz
MHz
SLEEP
RANDOM
PRGM
AI
EDIT
S1
S2
S3
S4
[11G ~ 9G]
[8G]
[T-BASS]
[BBE]
[7G ~ 3G]
[6G ~ 3G]
[2G]
[1G]

ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B10	B10	B10	S3	d	d	d	d	d	n	**20**
P2	B1	B1	B1	B1	j , p	j , p	j , p	j , p	j , p	o	**19**
P3	B11	B11	B11	**AUTO**	n	n	n	n	n	3e	**18**
P4	B2	B2	B2	B2	r	r	r	r	r	3c	**17**
P5	B12	B12	B12	**DD NR**	c	c	c	c	c	3a,3d,3g	**16**
P6	B3	B3	B3	B3	e	e	e	e	e	3b	**15**
P7	B13	B13	B13	(	m	m	m	m	m	2e	**14**
P8	B4	B4	B4	B4	g	g	g	g	g	2c	**13**
P9	B5	B5	B5	B5	f	f	f	f	f	2a,2d,2g	**11**
P10	B15	B15	B15	b #	b	b	b	b	b	ℓ	**10**
P11	B6	B6	B6	B6	k	k	k	k	k	j	**9**
P12	B16	B16	B16	)	h	h	h	h	h	h	**8**
P13	B7	B7	B7	B7	a	a	a	a	a	k	**7**
P14	B14	B14	B14	([#])	**PM** (lower)	col 2	col1(upper)	—	**KHz**	2b	**12**
P15	B17	B17	B17	([b])	**AM** (lower)	**REC**	**MONO**	(((ↀ)))	○	1e	**6**
P16	B8	B8	B8	B8	▷	Ðp	col1(upper)	—	**MHz**	1a,1d,1g	**5**
P17	B18	B18	B18	B12	◁	1d	1d	1d	1d	1c	**4**
P18	B9	B9	B9	B9	**REC**	1e	1e	1e	1e	1b	**3**
P19	[ROCK]	[POP]	[CLASSIC]	B13	**PM** (upper)	1c	1c	1c	1c	—	**2**
P20	[ÐISCO]	[LIVE]	[HALL]	B14	1g	1g	1g	1g	1g	m	**1**
P21	—	—	—	B11	1b, 1c	1f	1f	1f	1f	↩	**EDIT**
P22	**DISCO**	**LIVE**	**HALL**	B10	◷	1b	1b	1b	1b	**SLEEP**	**AI**
P23	**ROCK**	**POP**	**CLASSIC**	B15	**AM** (upper)	1a	1a	1a	1a	**RANDOM**	**PRGM**
P24	S4	—	—	S2 ⇄	—	—	—	—	—	—	S1
P25	—	—	—	**BBE**	—	—	—	—	—	—	—

FL, BJ461GK
GRID ASSIGNMENT



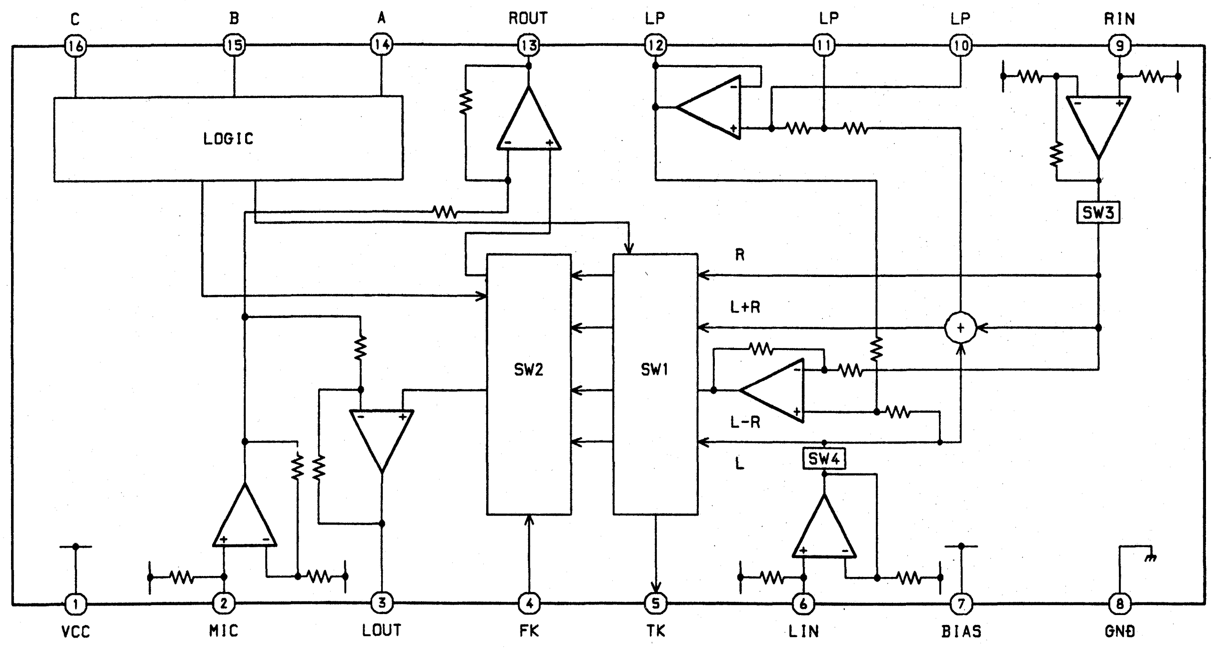
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
AG
EON
RDS
RT
TRAFFIC
SLEEP
T-BASS
BBE
AUTO
VF
REC
AM
PM
MONO
kHz
MHz
DD NR
PRGM
AI
EDIT
RANDOM
S1
S2
S3
S4
(11G)
(9G)
(12G, 11G)
(12G ~10G)
(10G ~ 3G)
(8G, 6G, 4G)
(7G, 5G)
(2G)
(1G)

ANODE CONNECTION

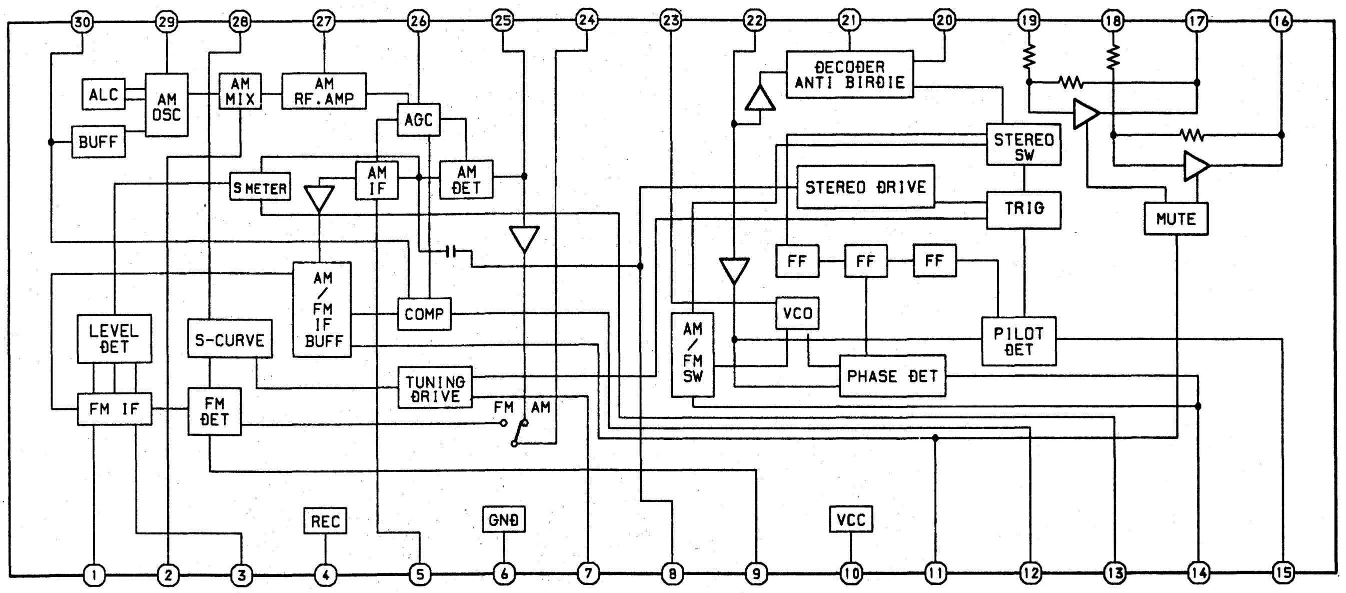
	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	B1	B1	2d	2d	2d	2d	2d	2d	2d	2d	n	**20**
P2	B2	B2	2n	2n	2n	2n	2n	2n	2n	2n	o	**19**
P3	B3	B3	2p	2p	2p	2p	2p	2p	2p	2p	3e	**18**
P4	**RT**	**AUTO**	2r	2r	2r	2r	2r	2r	2r	2r	3c	**17**
P5	**RDS**	S3	2e	2e	2e	2e	2e	2e	2e	2e	3a,3d,3g	**16**
P6	**EOM**	col1 (DOWN)	2c	2c	2c	2c	2c	2c	2c	2c	3b	**15**
P7	**AG**	2d	2g	2g	2g	2g	2g	2g	2g	2g	2e	**14**
P8	◷	2e	2m	2m	2m	2m	2m	2m	2m	2m	2c	**13**
P9	**REC**	2c	2f	2f	2f	2f	2f	2f	2f	2f	2a,2d,2g	**12**
P10	**AM**	2g	2b	2b	2b	2b	2b	2b	2b	2b	l	**11**
P11	2g	2f	2k	2k	2k	2k	2k	2k	2k	2k	j	**10**
P12	2b, 2c	2b	2j	2j	2j	2j	2j	2j	2j	2j	h	**9**
P13	**PM**	2a	2h	2h	2h	2h	2h	2h	2h	2h	k	**8**
P14	Ðp	col1 (UP)	2a	2a	2a	2a	2a	2a	2a	2a	2b	**7**
P15	1d	1d	1d	**MHz**	B1	B1	B1	B1	B1	○	1e	**6**
P16	1e	1e	1e	**KHz**	B2	B2	B2	B2	B2	◁	1a,1d,1g	**5**
P17	1c	1c	1c	**MONO**	B3	B3	B3	B3	B3	▷	1c	**4**
P18	1g	1g	1g	△ (b)	B4	B4	B4	B4	B4	(	1b	**3**
P19	1f	1f	1f	△ (#)	B5	B5	B5	B5	B5	)	m	**2**
P20	1b	1b	1b	**SLEEP**	B6	B6	B6	B6	B6	**DD NR**	**AI**	**1**
P21	1a	1a	1a	**TRAFFIC**	B7	B7	B7	B7	B7	**REC**	↩	**EDIT**
P22	–	(((ↀ)))	–	–	B8	B8	B8	B8	B8	col2	**PRGM**	**RANDOM**
P23	**T-BASS**	–	–	–	S1	–	–	–	S1	⇄	–	S2
P24	–	**BBE**	–	–	–	–	–	–	–	–	–	–
P25	–	–	–	S4	–	–	–	–	–	–	–	–

IC BLOCK DIAGRAM – 1

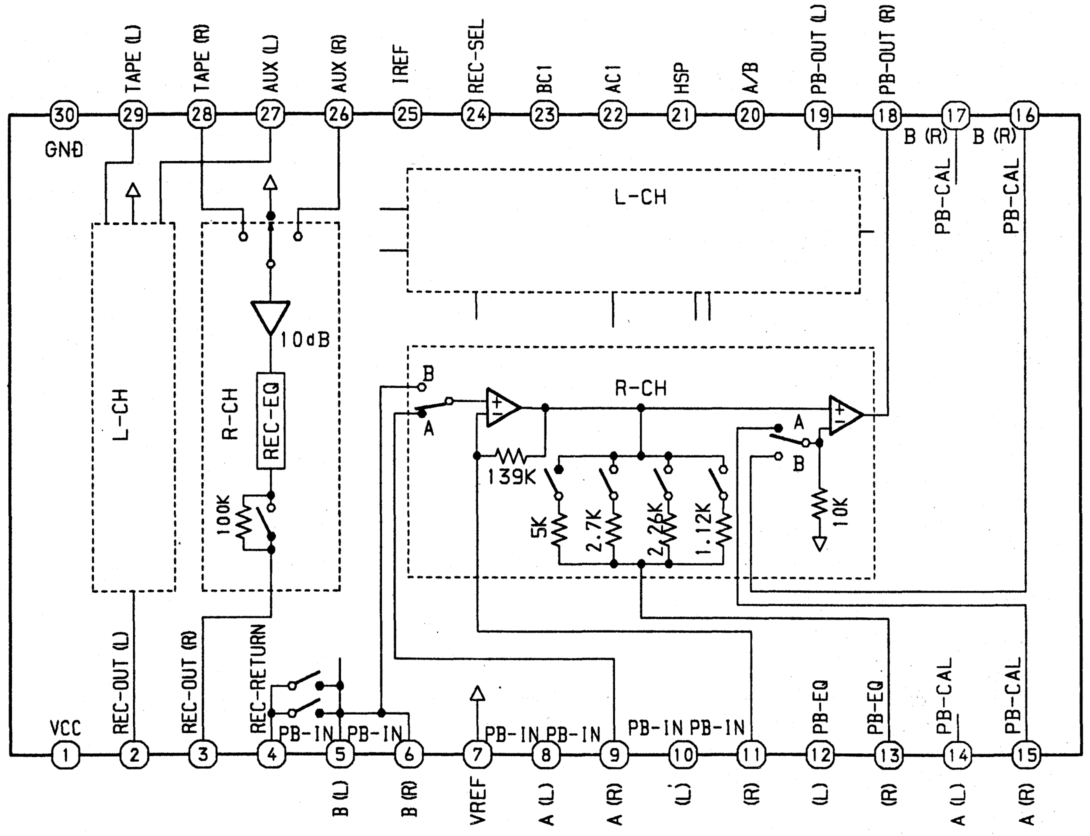
IC, BA3836


C
B
A
ROUT
LP
LP
LP
RIN
16
15
14
13
12
11
10
9
LOGIC
SW3
R
L+R
SW2
SW1
L-R
L
SW4
1
2
3
4
5
6
7
8
VCC
MIC
LOUT
FK
TK
LIN
BIAS
GND

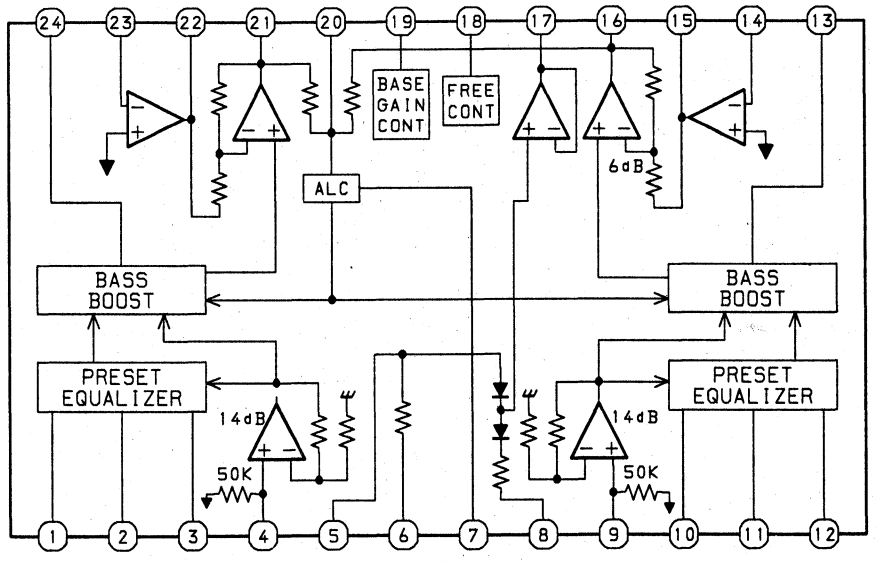
IC, LA1836L


30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
ALC
AM OSC
AM MIX
AM RF.AMP
AGC
BUFF
S METER
AM IF
AM DET
AM / FM IF BUFF
COMP
LEVEL DET
S-CURVE
FM IF
FM DET
TUNING DRIVE
FM
AM
DECODER ANTI BIRDIE
STEREO SW
STEREO DRIVE
TRIG
MUTE
FF
FF
FF
VCO
AM / FM SW
PILOT DET
PHASE DET
REC
GND
VCC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

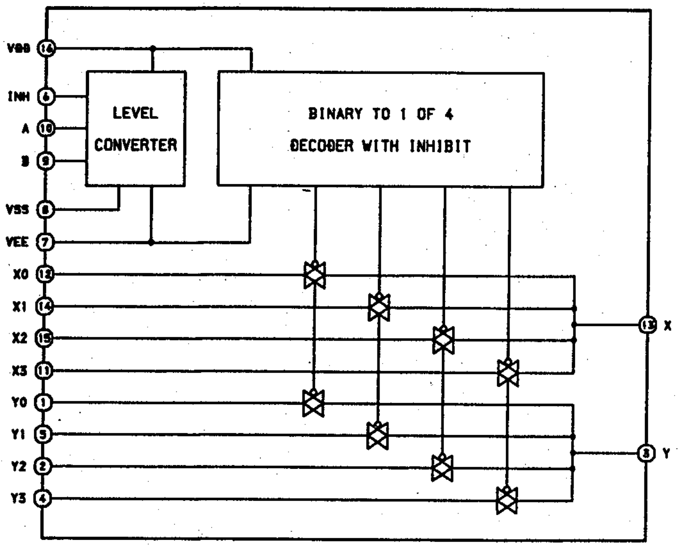
IC, HA12185NT


TAPE (L)
TAPE (R)
AUX (L)
AUX (R)
IREF
REC-SEL
BC1
AC1
HSP
A/B
PB-OUT (L)
PB-OUT (R)
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
GND
B (R)
B (R)
PB-CAL
PB-CAL
L-CH
R-CH
REC-EQ
10dB
10K
L-CH
R-CH
B
A
139K
5K
2.7K
2.26K
1.12K
A
B
10K
VCC
REC-OUT (L)
REC-OUT (R)
REC-RETURN
PB-IN
PB-IN
PB-IN
PB-IN
PB-IN
PB-IN
PB-EQ
PB-EQ
PB-CAL
PB-CAL
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
B (L)
B (R)
VREF
A (L)
A (R)
(L)
(R)
(L)
(R)
A (L)
A (R)

IC, BA3842F


24
23
22
21
20
19
18
17
16
15
14
13
BASE GAIN CONT
FREE CONT
ALC
6dB
BASS BOOST
BASS BOOST
PRESET EQUALIZER
PRESET EQUALIZER
14dB
14dB
50K
50K
1
2
3
4
5
6
7
8
9
10
11
12

IC, BU4052BC



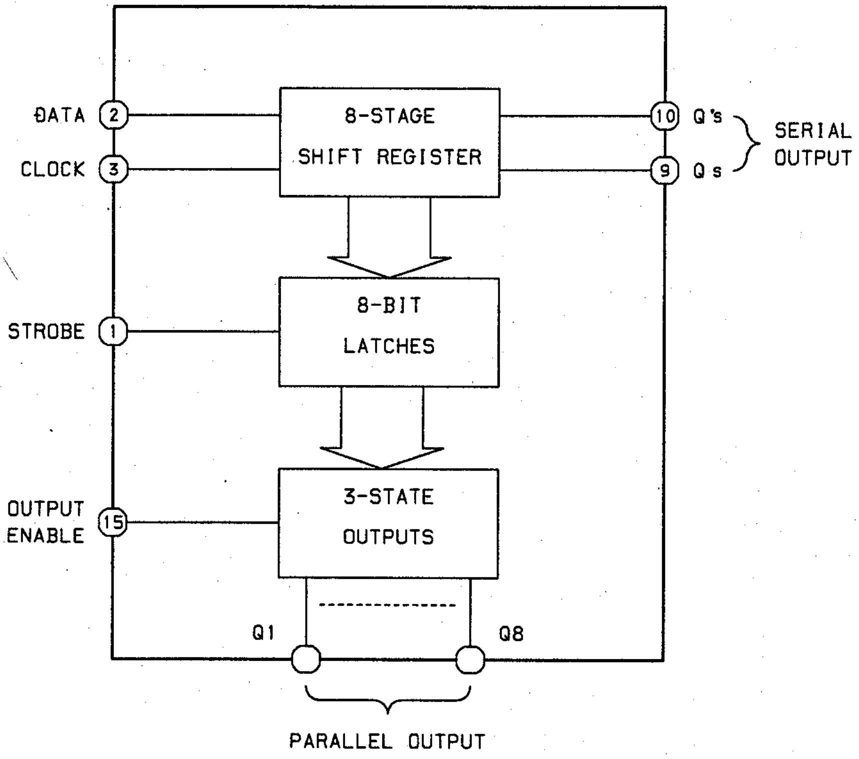
VDD 16
INH 6
A 10
B 9
VSS 8
VEE 7
X0 12
X1 14
X2 15
X3 11
Y0 1
Y1 5
Y2 2
Y3 4
LEVEL CONVERTER
BINARY TO 1 OF 4 DECODER WITH INHIBIT
13 X
3 Y

TRUTH TABLE

INHIBIT	A	B	ON SWITCH
L	L	L	X0 Y0
L	H	L	X1 Y1
L	L	H	X2 Y2
L	H	H	X3 Y3
H	×	×	NONE

X : DON'T CARE.

IC, BU4094BC/BCF



DATA 2
CLOCK 3
STROBE 1
OUTPUT ENABLE 15
8-STAGE SHIFT REGISTER
8-BIT LATCHES
3-STATE OUTPUTS
10 Q's
9 Qs
SERIAL OUTPUT
Q1
Q8
PARALLEL OUTPUT

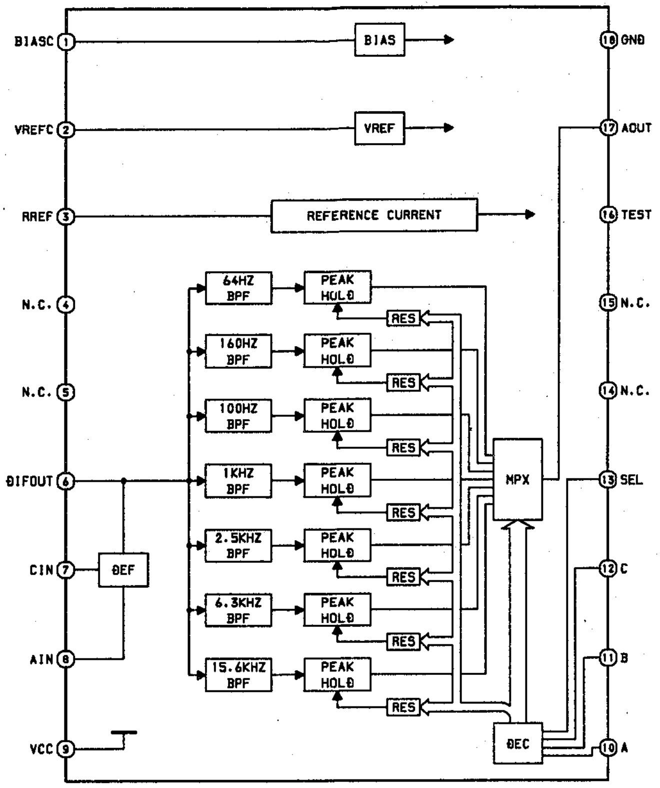
TRUTH TABLE

CLOCK	OUTPUT ENABLE	STROBE	DATA	PARALLEL OUTPUTS		SERIAL OUTPUTS	
				Q1	Qn	Qs	Q's
↑	L	×	×	Z	Z	Q7	NO Chg.
↓	L	×	×	Z	Z	No Chg.	Qs
↑	H	L	×	No Chg.	No Chg.	Q7	No Chg.
↑	H	H	L	L	Qn-1	Q7	No Chg.
↑	H	H	H	H	Qn-1	Q7	No Chg.
↓	H	×	×	No Chg.	No Chg.	No Chg.	Qs

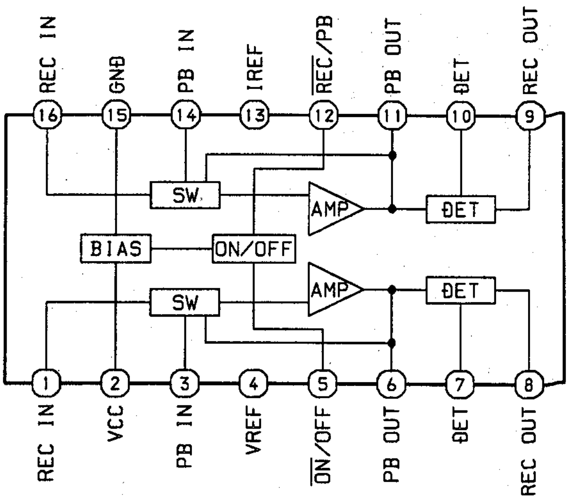
Z=High Impedance

X=Don't Care

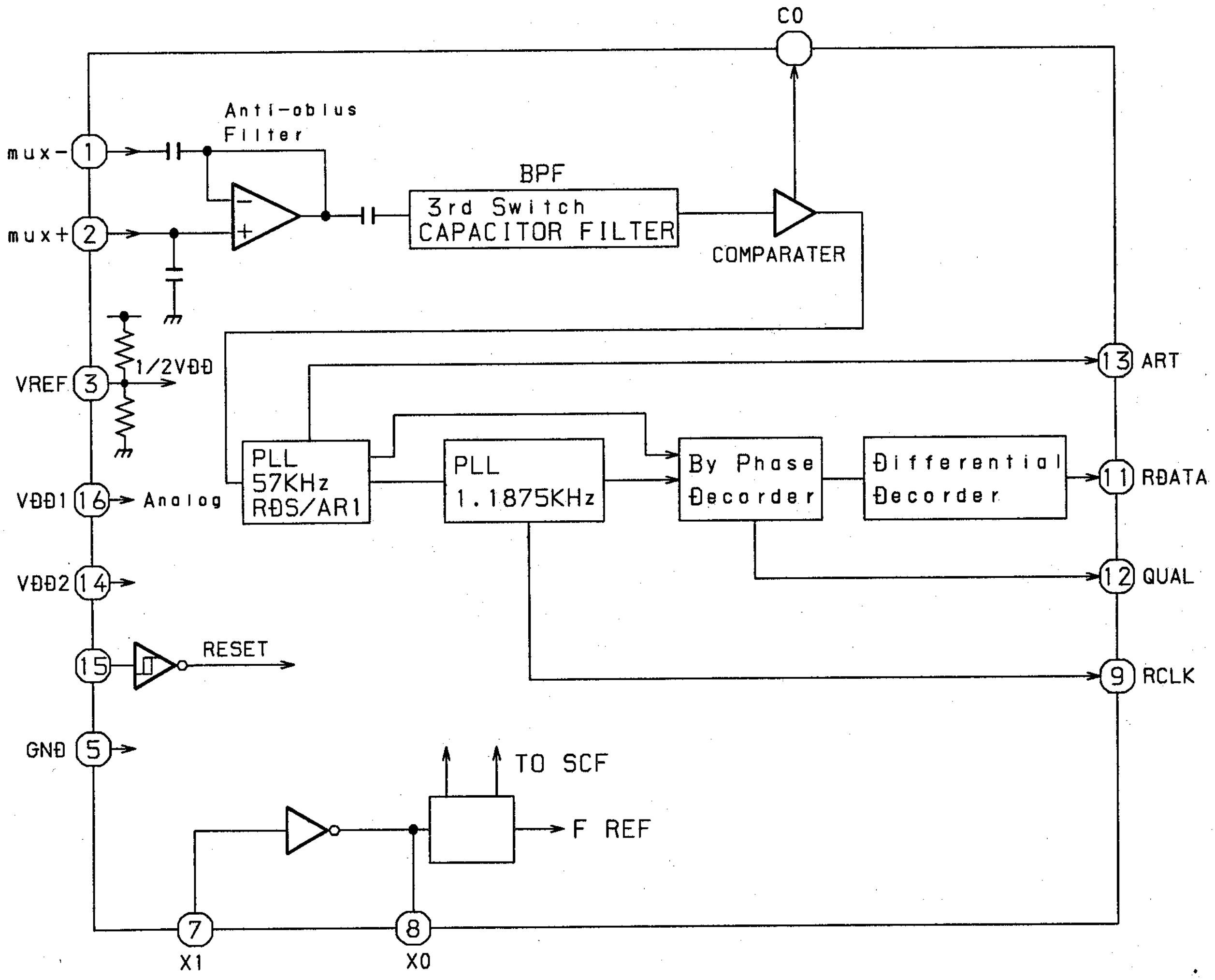
IC, BA3834S


BIASC 1
VREFC 2
RREF 3
N.C. 4
N.C. 5
DIFOUT 6
CIN 7
AIN 8
VCC 9
BIAS
VREF
REFERENCE CURRENT
64HZ BPF
160HZ BPF
100HZ BPF
1KHZ BPF
2.5KHZ BPF
6.3KHZ BPF
15.6KHZ BPF
PEAK HOLD
RES
MPX
DEF
DEC
18 GND
17 AOUT
16 TEST
15 N.C.
14 N.C.
13 SEL
12 C
11 B
10 A

IC, HA12134A


REC IN 16
GND 15
PB IN 14
IREF 13
REC/PB 12
PB OUT 11
DET 10
REC OUT 9
SW
AMP
DET
BIAS
ON/OFF
SW
AMP
DET
REC IN 1
VCC 2
PB IN 3
VREF 4
ON/OFF 5
PB OUT 6
DET 7
REC OUT 8

IC, BU1921FS


CO
Anti-oblus Filter
BPF
3rd Switch CAPACITOR FILTER
COMPARATER
mux- 1
mux+ 2
VREF 3
1/2VDD
VDD1 16 Analog
VDD2 14
15
RESET
GND 5
PLL 57KHz RDS/AR1
PLL 1.1875KHz
By Phase Decorder
Differential Decorder
13 ART
11 RDATA
12 QUAL
9 RCLK
TO SCF
F REF
7 X1
8 X0

IC DESCRIPTION

IC, LC866432V-5A45

Pin No.	Pin Name	I/O	Description
1	O-PLL CE	O	PLL IC chip enable.
2	O-DSP/CE	O	DSP data latch strobe output.
3	O-M/STB	O	Main shift register data latch strobe output.
4	O-M/DATA	O	Main shift register, PLL/Key control/DSP related data output.
5	O-M/CLK	O	Main shift register, PLL/Key control/DSP related clock.
6	I-HP	I	Not used. Connect Pin 10 with RES.
7	$\overline{\text{RESET}}$	I	Reset input.
8	I-$\overline{\text{STEREO}}$	I	Tuner stereo detected input.
9	I-$\overline{\text{TUNE}}$/IFC	I	Tuner $\overline{\text{SD}}$ detected input. IF count serial data input.
10	VSS1	-	GND.
11,12	CF1, 2	-	5.76 MHz oscillator circuit.
13	VDD1	-	Power supply input.
14~16	I-KEY1 - 3	I	Key input. (A/D)
17	I-CD/SW	I	CD mechanical switch A/D converter input.
18	I-CD/DISH	I	CD turntable photo sensor A/D converter input.
19	I-MS	I	Deck music sensor signal input.
20	I-SPEANA	I	A/D input for spectrum analyzer display.
21	I-MIC	I	Microphone input for auto VF display.
22	I-TM BASE	I	Reference clock input for timer watch.
23	I-$\overline{\text{HOLD}}$	I	Power failure detected input "L" to stop clock and maintain memory.
24	I-$\overline{\text{RMC}}$	I	System remote control signal input.
25~35	G11~G1	O	FL grid output G11~G1.
36~40	P23~P19	O	FL segment output P23~P19.
41	VDD2	-	Power supply input.
42	-VP	-	Power supply input (-34.5V) for FL display.
43	P18/$\overline{\text{CST1}}$	O/I	FL segment output P18, DECK1 cassette detect switch data input.
44	P17/$\overline{\text{AUTO1}}$	O/I	FL segment output P17, DECK1 auto stop signal input.
45	P16/$\overline{\text{CAM1}}$	O/I	FL segment output P16, DECK1 cam switch data input.
46	P15/$\overline{\text{CAM2}}$	O/I	FL segment output P15, DECK2 cam switch data input.
47	P14/$\overline{\text{AUTO2}}$	O/I	FL segment output P14, DECK2 auto stop signal input.
48	P13/$\overline{\text{CST2}}$	O/I	FL segment output P13, DECK2 cassette detect switch data input.
49	P12/REA2	O/I	FL segment output P12, DECK2 side-A record OK switch data input.
50	P11/REB2	O/I	FL segment output P11, DECK2 side-B record OK switch data input.
51	P10/NO·ECHO	O/I	FL segment output P10, NO·ECHO mode data input to diode.
52	P1/AM-ST,FM-W	O/I	FL segment output P1, AM stereo, FM-WIDE mode data input to diode.
53	P2/AM10K	O/I	FL segment output P2, AM 10kHz step data input to diode.
54	P3/LW	O/I	FL segment output P3, LW mode data input to diode.
55	P4/SW	O/I	FL segment output P4, SW mode data input to diode.
56	P5	O	FL segment output P5.
57	P6/NO·DSP	O/I	FL segment output P6, NO·DSP data input to diode.
58	P7/KEY·CON	O/I	FL segment output P7, key control data input to diode.

Pin No.	Pin Name	I/O	Description
59	P8/PAL	O/I	FL segment output P8, PAL data input to diode.
60	P9/OIRT	O/I	FL segment output P9, OIRT mode data input to diode.
61	O-CLOSE	O	CD tray close data output.
62	O-OPEN	O	CD tray open data output.
63	O-DI/R	O	CD turntable reverse rotation output.
64	O-DI/F	O	CD turnable forward rotation output.
65	O-$\overline{\text{POWER}}$	O	System power supply $\overline{\text{ON}}$/OFF output.
66	O-$\overline{\text{SOL1}}$	O	DECK1 solenoid output.
67	O-$\overline{\text{SOL2}}$	O	DECK2 solenoid output.
68	O-$\overline{\text{MOTOR}}$	O	DECK motor output.
69	O-$\overline{\text{KEY·SCAN}}$	O	Switch scan timing output.
70	O-F/STB	O	Front shift register, data latch strobe output.
71	O-F/CLK	O	Front shift register, data transfer clock output.
72	O-F/DATA	O	Front shift register, data output.
73	VSS2	-	GND.
74	O-CD/DATA	O	CD IC control data output.
75	O-CD/XTL	O	CD IC control latch strobe output.
76	O-CD/CLK	O	CD IC control clock output.
77	I-CD/SENSE	I	CD IC control data bus data input.
78	O-CD/SQ·DATA	O	CD IC control data bus data output.
79	O-CD/SQ·CLK	O	CD IC control data bus clock output.
80	O-MUTE	O	System mute output.

IC, LC72131D

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td rowspan="2">–</td><td rowspan="2">A crystal oscillator (7.2MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td></tr>
<tr><td>2</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC866432V-5A45) when relevant key is operated.
Active "H".</td></tr>
<tr><td>5</td><td>CLK</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC866432V-5A45).</td></tr>
<tr><td>7</td><td>TM-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ / AM</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IFIN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>15</td><td>A MIN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>F MIN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>–</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>AIN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>AOUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground.</td></tr>
</table>

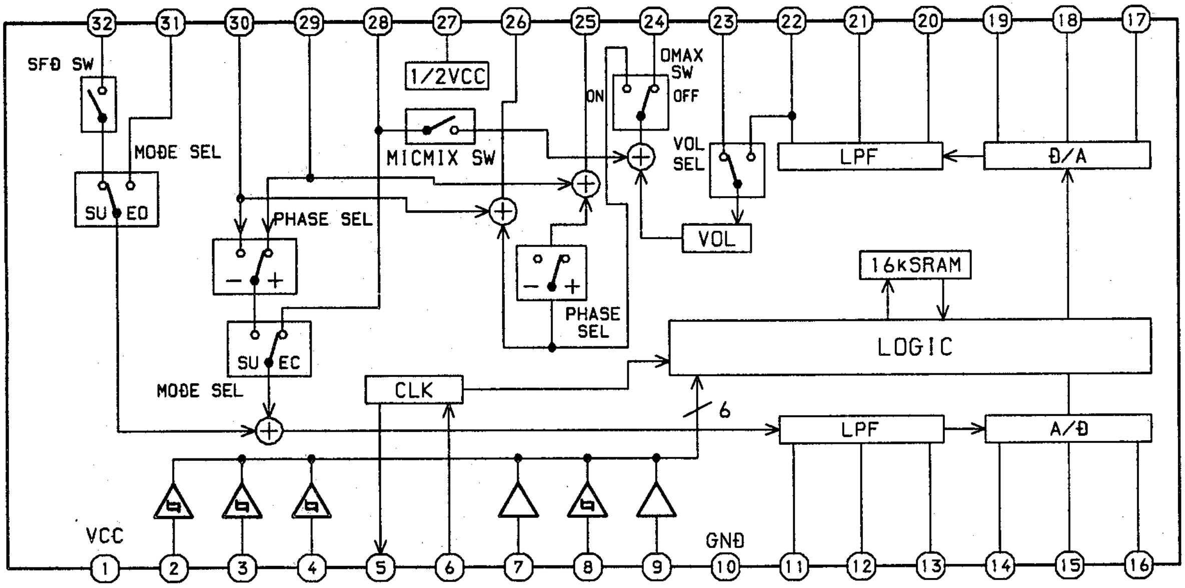
IC, LC866448W-5B86

Pin No.	Pin Name	I/O	Description
1	O-PLL CE	O	PLL IC chip enable.
2	O-DSP/CE	O	DSP data latch strobe output.
3	O-M/STB	O	Main shift register data latch strobe output.
4	O-M/DATA	O	Main shift register, PLL/Key control/DSP related data output.
5	O-M/CLK	O	Main shift register, PLL/Key control/DSP related clock.
6	I-HP	I	Not used. Connect Pin 10 with RES.
7	RESET	I	Reset input.
8	I-DI-SENS	I	CD / Turn table sensor input.
9	I-TUNE/IFC	I	Tuner SD detected input. IF count serial data input.
10	VSS1	-	GND.
11,12	CF1, 2	-	5.76 MHz oscillator circuit.
13	VDD1	-	Power supply input.
14~16	I-KEY1 - 3	I	Key input. (A/D)
17	I-CD/SW	I	CD mechanical switch A/D converter input.
18	I-RDSIG	I	RDS IC / Qual input.
19	I-MS	I	Deck music sensor signal input.
20	I-SPEANA	I	A/D input for spectrum analyzer display.
21	I-MIC	I	Microphone input for auto VF display.
22	I-HOLD	I	Power failure detected input "L" to stop clock and maintain memory.
23	I-RDCLK	I	RDS IC/ R CLK input.
24	I-RMC	I	System remote control signal input.
25~36	G12~G1	O	FL grid output G12~G1.
37~40	P22~P19	O	FL segment output P22~P19.
41	VDD2	-	Power supply input.
42	-VP	-	Power supply input (-34.5V) for FL display.
43	P18/CST1	O/I	FL segment output P18, DECK1 cassette detect switch data input.
44	P17/AUTO1	O/I	FL segment output P17, DECK1 auto stop signal input.
45	P16/CAM1	O/I	FL segment output P16, DECK1 cam switch data input.
46	P15/CAM2	O/I	FL segment output P15, DECK2 cam switch data input.
47	P14/AUTO2	O/I	FL segment output P14, DECK2 auto stop signal input.
48	P13/CST2	O/I	FL segment output P13, DECK2 cassette detect switch data input.
49	P12/REA2	O/I	FL segment output P12, DECK2 side-A record OK switch data input.
50	P11/REB2	O/I	FL segment output P11, DECK2 side-B record OK switch data input.
51	P10/I-TM BASE	O/I	FL segment output P10, reference clock input for timer watch.
52	P1/AM-ST,FM-W	O/I	FL segment output P1, AM stereo, FM-WIDE mode data input to diode.
53	P2/AM10K	O/I	FL segment output P2, AM 10kHz step data input to diode.
54	P3/NO LW	O/I	FL segment output P3.
55	P4/SW	O/I	FL segment output P4, SW mode data input to diode.
56	P5	O	FL segment output P5.
57	P6/NO·DSP	O/I	FL segment output P6, NO·DSP data input to diode.
58	P7/NO RDS	O/I	FL segment output P7, NO RDS data input to diode.

Pin No.	Pin Name	I/O	Description
59	P8/PAL	O/I	FL segment output P8, PAL data input to diode.
60	P9/OIRT	O/I	FL segment output P9, OIRT mode data input to diode.
61	O-CLOSE	O	CD tray close data output.
62	O-OPEN	O	CD tray open data output.
63	O-DI/R	O	CD turntable reverse rotation output.
64	O-DI/F	O	CD tumable forward rotation output.
65	O-$\overline{\text{POWER}}$	O	System power supply $\overline{\text{ON}}$/OFF output.
66	O-$\overline{\text{SOL1}}$	O	DECK1 solenoid output.
67	O-$\overline{\text{SOL2}}$	O	DECK2 solenoid output.
68	O-$\overline{\text{MOTOR}}$	O	DECK motor output.
69	O-$\overline{\text{KEY·SCAN}}$	O	Switch scan timing output.
70	O-F/STB	O	Front shift register, data latch strobe output.
71	O-F/CLK	O	Front shift register, data transfer clock output.
72	O-F/DATA	O	Front shift register, data output.
73	VSS2	-	GND.
74	O-CD/DATA	O	CD IC control data output.
75	O-CD/XTL	O	CD IC control latch strobe output.
76	O-CD/CLK	O	CD IC control clock output.
77	I-CD/SENSE/I-RD-DA	I	CD IC control data bus data input / latch strobe output / RDS data input.
78	O-CD.SQ DATA/ I-$\overline{\text{STEREO}}$	O/I	CD IC control data bus data output / $\overline{\text{STEREO}}$ input.
79	O-CD/SQ·CLK	O	CD IC control data bus clock output.
80	O-MUTE	O	System mute output.

IC BLOCK DIAGRAM – 2

IC, M65846FP-600D



SFD SW
MODE SEL
SU
ED
PHASE SEL
SU
EC
MODE SEL
1/2VCC
MICMIX SW
ON
DMAX SW
OFF
VOL SEL
VOL
LPF
D/A
16kSRAM
LOGIC
CLK
6
LPF
A/D
VCC
GND
1
2
3
4
5
6
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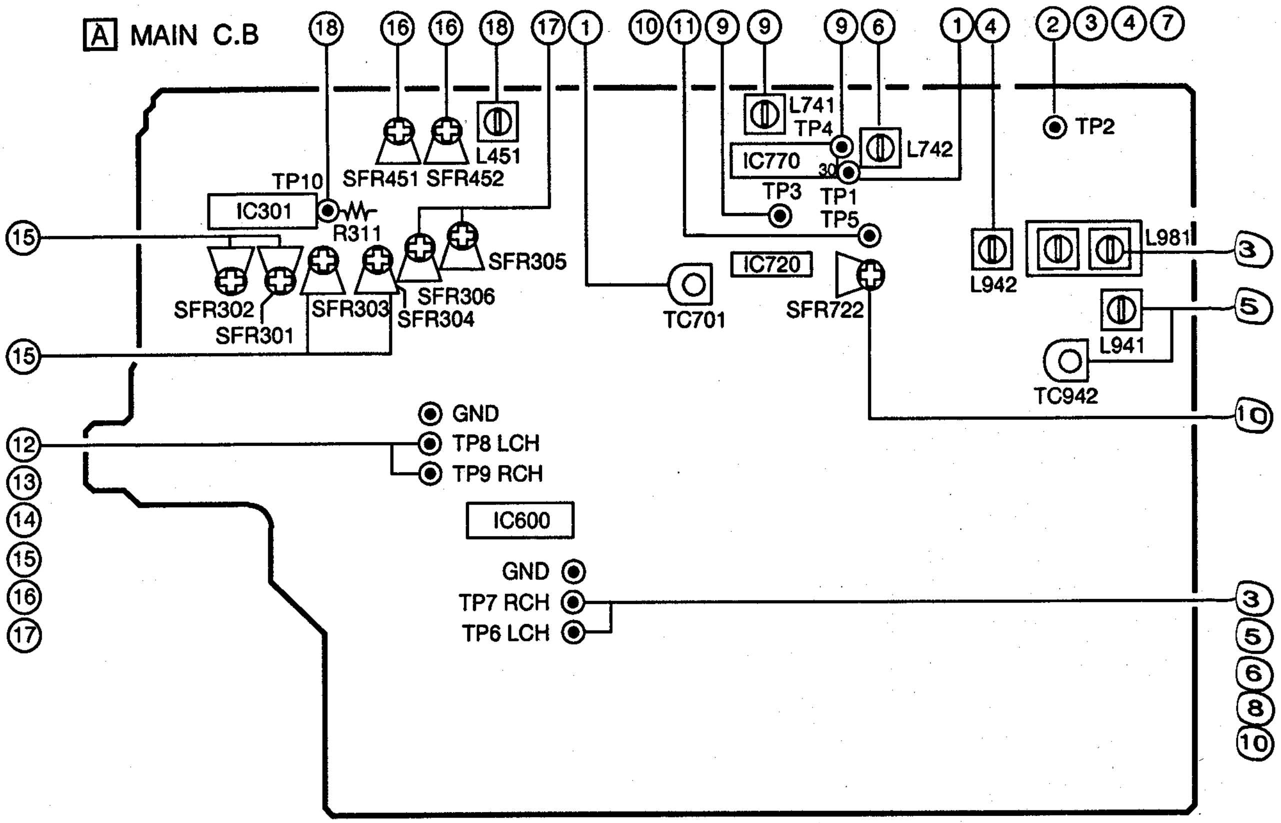
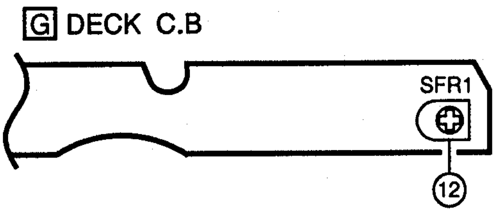
△ : SCHMIT TRIGGER BUFFER (WITH PULLDOWN)

△ :CMOS BUFFER (WITH PULLDOWN)

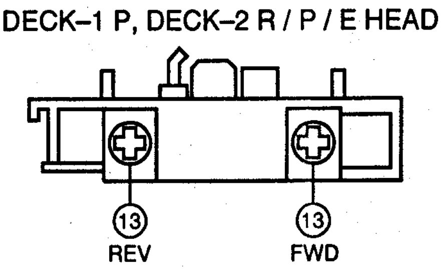
ADJUSTMENT <TUNER / DECK>



A MAIN C.B
⑱ ⑯ ⑯ ⑱ ⑰ ① ⑩ ⑪ ⑨ ⑨ ⑨ ⑥ ① ④ ② ③ ④ ⑦
L451
SFR451 SFR452
TP10
IC301
R311
SFR305
SFR306
SFR304
SFR303
SFR302
SFR301
L741
TP4
IC770
30
L742
TP3
TP1
TP5
IC720
SFR722
TC701
TP2
L942
L981
L941
TC942
GND
TP8 LCH
TP9 RCH
IC600
GND
TP7 RCH
TP6 LCH
⑮ ⑮ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰
③ ⑤ ⑩ ③ ⑤ ⑥ ⑧ ⑩



G DECK C.B
SFR1
⑫



DECK-1 P, DECK-2 R / P / E HEAD
⑬
REV
⑬
FWD

< TUNER SECTION >

1. Clock Frequency Adjustment
   Settings : • Test point : TP1 (CLK IC770 pin30)
   • Adjustment location : TC701
   Method : Set to MW 1602kHz and adjust TC701 so that the test point becomes 2052kHz ± 0.01kHz.

2. MW VT Check
   Settings : • Test point : TP2 (VT)
   Method : Set to MW 1602kHz and check that the test point is 6.8V ± 1.0V.

3. MW Tracking Adjustment
   Settings : • Test point : TP6, TP7
   • Adjustment location :
   L981 .... 999kHz
   Method : The level at 999kHz is adjusted to MAX by L981.

4. LW VT Adjustment
   Settings : • Test point : TP2 (VT)
   • Adjustment location : L942
   Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V ± 0.05V.

5. LW Tracking Adjustment
   Settings : • Test point : TP6, TP7
   • Adjustment location :
   L941 .... 144kHz
   TC942 .... 290kHz
   Method : Set up TC942 to center before adjustment. The level at 144kHz is adjusted to MAX by L941. Then the level at 290kHz is adjusted to MAX by TC942.

6. AM IF Adjustment
   Settings : • Test point : TP6, TP7
   • Adjustment location :
   L742 .... 450kHz

7. FM VT Check
Settings : • Test point : TP2 (VT)
Method : Set to FM 87.5MHz, 108.0MHz and check that the test point is more than 1.3V (87.5MHz) and less than 8.0V(108.0MHz).

8. FM Tracking Check
Settings : • Test point : TP6, TP7
Method : • Set to FM 98.0MHz and check that the test point is 6dB ± 6dB.

9. DC Balance / Mono Distortion Adjustment
Settings : • Test point : TP3, TP4 (DC balance)
: TP6, TP7 (Distortion)
• Adjustment location : L741
• Input level : 54dB
Method : Set to FM 98.0MHz, and adjust L741 so that the voltage between TP3 and TP4 becomes 0V ± 0.04V.
Next, check that the distortion is less than 1.3%.

10. Auto Stop Level Adjustment
Settings : • Test point : TP5
• Adjustment location : SFR722
• Input level : 16dB
Method : • Set to FM 98.0MHz and adjust voltage low (about 0.01V) by SFR722. After that voltage high (about 7.0V) by 2dB down.

11. Auto Stop Level Check
MW
Settings : • Test point : TP5
• Input level : 50dB
Method : Set to MW 999kHz and check that the test point is 45 ~ 65 dB.

FM
Settings : • Test point : TP5
• Input level : 18dB
Method : Set to FM 98.0MHz and check that the test point is 20 dB ± 5 dB.

< DECK SECTION >

12. Tape Speed Adjustment
Settings : • Test tape : TTA–100
• Test point : TP8, TP9
• Adjustment location : SFR1
Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

13. Head Azimuth Adjustment
Settings : • Test tape : TTA–300
• Test point : TP8, TP9
• Adjustment location : Head azimuth adjustment screw
Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum. Next, perform on each FWD and REV PLAYmode.

14. PB Frequency Response Check (DECK 1, DECK 2)
Settings : • Test tape : TTA–300
• Test point : TP8, TP9
Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is ±2dB

15. PB Sensitivity Adjustment (DECK 1, DECK 2)
Settings : • Test tape : TTA–200
• Test point : TP8, TP9
• Adjustment location :
SFR301 (DECK 1, Lch)
SFR302 (DECK 1, Rch)
SFR303 (DECK 2, Lch)
SFR304 (DECK 2, Rch)
Method : Play back the test tape and adjust SFRs so that the output level of the test point becomes 300mV.

16. REC/PB Frequency Response Adjustment
Settings : • Test tape : TTA–602
• Test point : TP8, TP9
• Input signal : 1kHz / 10kHz (LINE IN)
• Adjustment location : SFR451 (Lch)
SFR452 (Rch)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that theoutput level at the TP8, TP9 becomes 17mV. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

17. REC/PB Sensitivity Adjustment
Settings : • Test tape : TTA–602
• Test point : TP8, TP9
• Input signal : 1kHz (LINE IN)
• Adjustment location : SFR305 (Lch)
SFR306 (Rch)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8, TP9 becomes 17mV. Record and play back the 1kHz signals and adjust SFRs so that the output is 17mV ± 0.5dB.

18. Bias OSC Frequency Adjustment
Settings : • Test tape : TTA–615
• Test point : TP10 (R311)
• Adjustment location : L451
Method : Set to the REC mode. Adjust L451 so that the frequency counter of the test point becomes 85 kHz ± 1 kHz.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity : (THD 3%)	-2dB ~ 14dB<820EZ,NAPIMK3EZ> -1dB ~ 11dB<V> [at 87.5 / 98.0MHz] 0dB ~ 16dB<820EZ,NAPIMK3EZ> 2dB ~ 14dB<V> [at 108.0MHz] 2dB ~ 14dB<V> [at 65.0/70.0/74.0MHz]
S/N 46dB<EZ>,50dB<V>	
Quieting sensitivity :	<820 EZ,NAPIMK3EZ> Less than 39dB [at 87.5 / 98.0 / 108.0MHz] <V> Less than 39dB [at 65.0 / 70.0 / 74.0MHz]
Signal to noise ratio :	<820EZ,NAPIMK3EZ> (MONO) More than 60dB (STEREO) More than 57dB [at 98.0MHz] <V> (MONO) More than 65dB (STEREO) More than 64dB [at 98.0MHz]
Distortion :	(MONO) Less than 1.3% [at 98.0MHz] (STEREO) Less than 2.0% [at 98.0MHz]
Auto stop level :	20dB ± 10dB [at 98.0MHz]
Stereo separation :	More than 20dB [at 98.0MHz]
Intermediate frequency :	10.7MHz

<AM(MW) SECTION>

Sensitivity : (S/N 20 dB)	52 ~ 62dB [at 603kHz] 48 ~ 58dB [at 999 / 1404kHz]
Signal to noise ratio :	More than 36dB [at 999kHz]
Distortion :	Less than 1.5% [at 999kHz]
Auto stop level :	40 ~ 65dB [at 999kHz]
Intermediate frequency :	450kHz

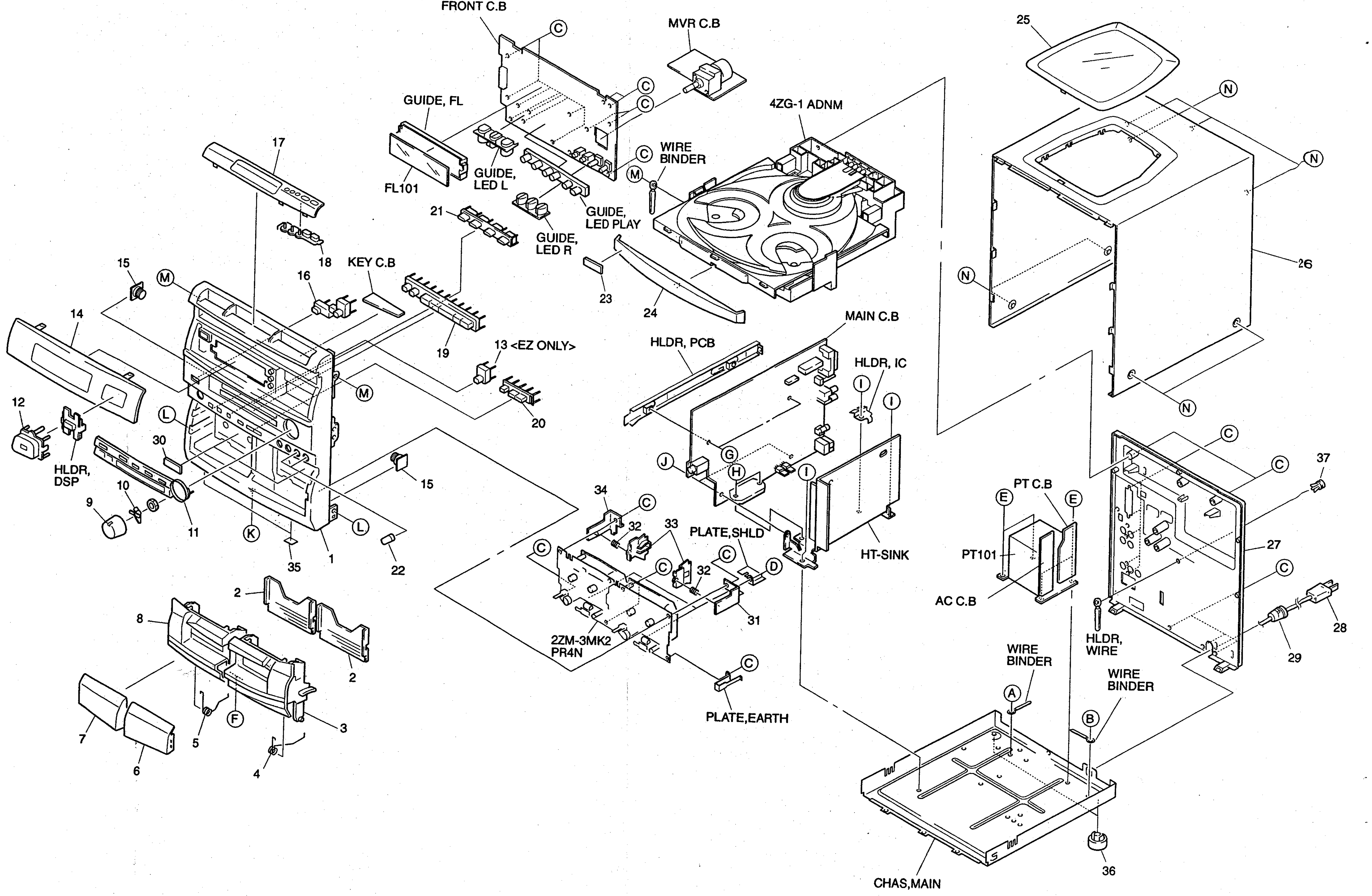
<LW SECTION>

Sensitivity : (S/N 20dB)	64dB ± 5dB (144kHz) 62dB ± 5dB (198kHz) 60dB ± 5dB (290kHz)
Distortion :	Less than 1.4% (198kHz)
Intermediate frequency :	450kHz

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.15% (R.M.S)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F & REW torque :	75 ~ 160g-cm
Back tension :	2 ~ 7g-cm (FWD, REV)
PB output level :	2.8V ± 2dB (SP OUT 2V)
REC/PB output level :	1.6V ± 2dB (SP OUT 2V)
Distortion (REC/PB) :	Less than 2.0% (NORM, CrO_2)
Noise level (PB) :	Less than 110mV (NORM, SP OUT 2V) Less than 90mV (CrO_2, SP OUT 2V)
Noise level (REC/PB) :	Less than 120mV (DOLBY OFF, NORM, SP OUT 2V) Less than 100mV (DOLBY OFF, CrO_2, SP OUT 2V)
Crosstalk :	More than 58dB (1kHz, 0VU)
Channel separation :	More than 45dB (1kHz, 0VU)
Erasing ratio :	More than 60dB (at 125Hz)
Test tape :	TTA–602 (NORMAL) TTA–615 (CrO_2)

MECHANICAL EXPLODED VIEW 1/1


FRONT C.B
Ⓒ
MVR C.B
25
GUIDE, FL
Ⓒ
Ⓒ
4ZG-1 ADNM
Ⓝ
17
Ⓒ
WIRE BINDER
Ⓜ
GUIDE, LED L
FL101
Ⓝ
GUIDE, LED PLAY
21
GUIDE, LED R
18
KEY C.B
15
Ⓜ
16
23
24
Ⓝ
26
14
MAIN C.B
13 <EZ ONLY>
HLDR, PCB
19
HLDR, IC
Ⓜ
Ⓘ
Ⓘ
12
Ⓛ
Ⓝ
20
HLDR, DSP
30
Ⓖ
Ⓙ
Ⓒ
Ⓗ
Ⓘ
Ⓒ
37
15
34
Ⓒ
PT C.B
Ⓔ
Ⓔ
10
9
11
Ⓚ
Ⓛ
32
33
PLATE,SHLD
27
35
1
22
Ⓒ
Ⓒ
32
Ⓓ
HT-SINK
PT101
Ⓒ
Ⓒ
2
8
31
AC C.B
28
2ZM-3MK2 PR4N
HLDR, WIRE
WIRE BINDER
29
2
Ⓒ
WIRE BINDER
Ⓐ
Ⓕ
3
PLATE,EARTH
Ⓑ
7
5
6
4
CHAS,MAIN
36

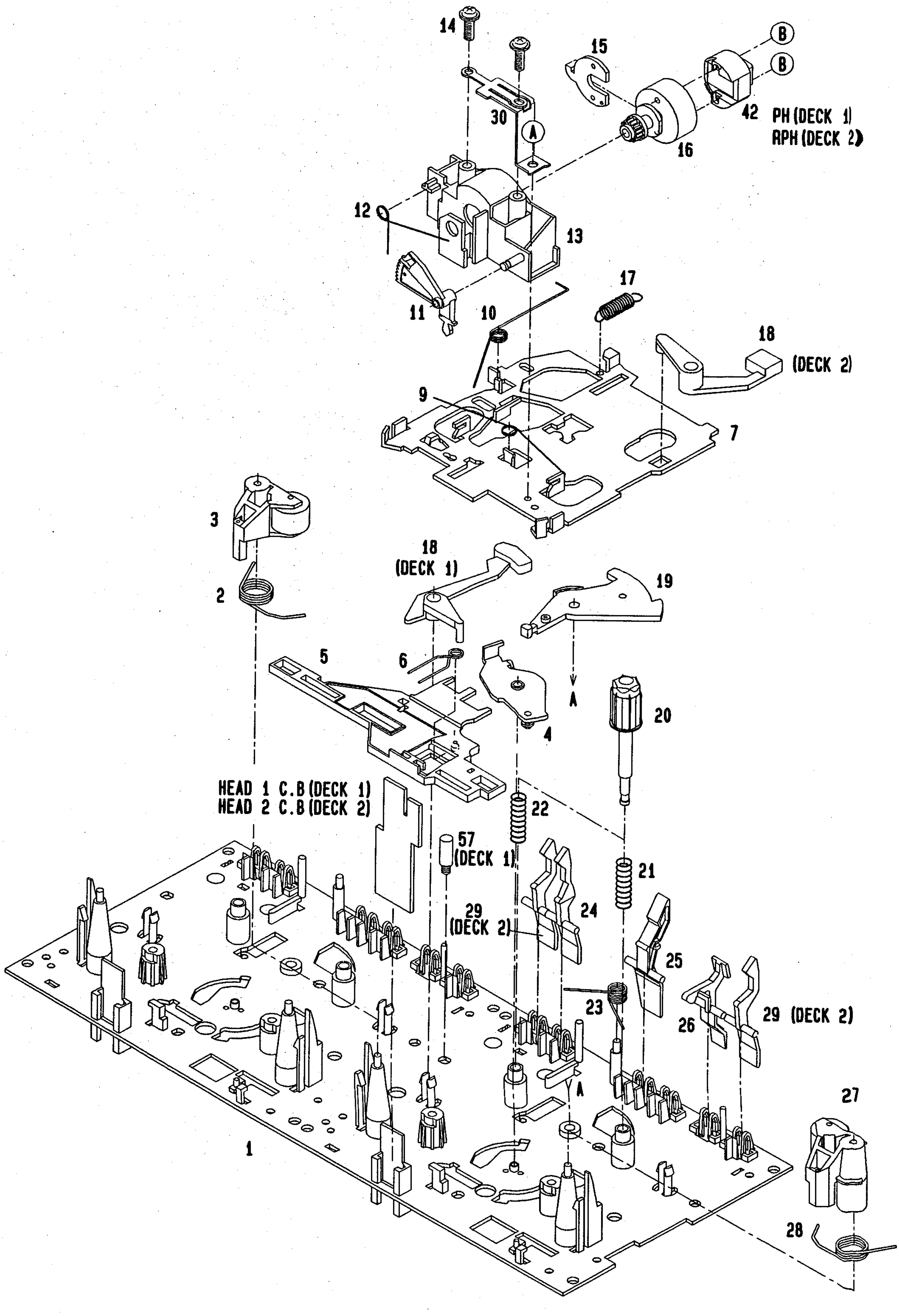
MECHANICAL PARTS LIST 1/1

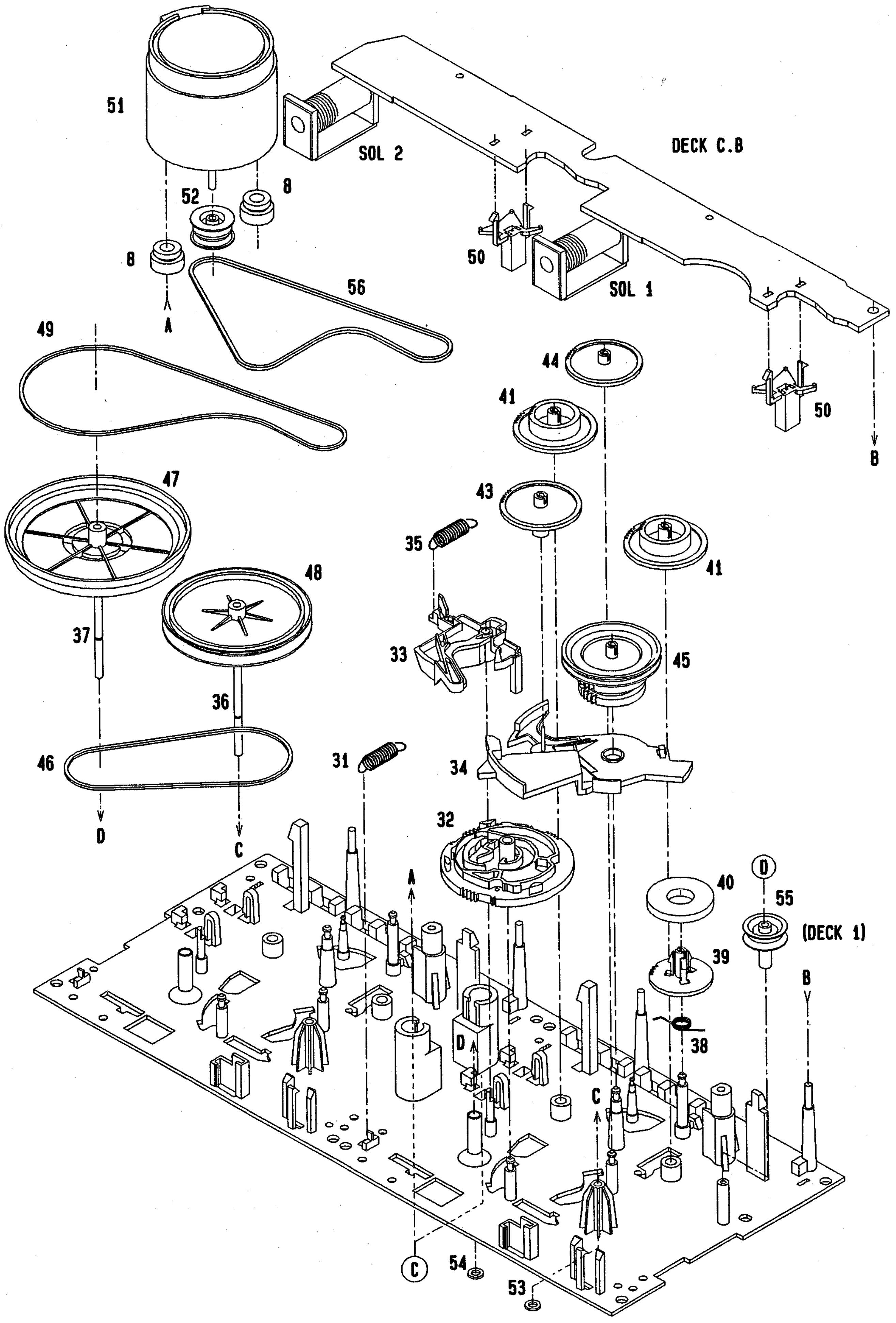
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NF5-073-010		CABI,FR AP1(RDS)<AP1MK3EZ>
1	86-NF5-026-110		CABI,FR E<800V>
1	86-NF5-061-010		CABI,FR E(RDS)<820EZ>
2	86-NF6-061-010		REFLECTOR,CASS
3	86-NF5-029-010		BOX,CASS R E
4	82-NF5-219-010		SPR-T,EJECT 2(SIN)
5	82-NF5-218-010		SPR-T,EJECT 1(SIN)
6	86-NF5-007-010		WINDOW,CASS R
7	86-NF5-006-010		WINDOW,CASS L
8	86-NF5-028-010		BOX,CASS L E
9	86-NF5-020-010		KNOB,RTRY MAIN
10	86-NF5-021-010		LENS,VOL
11	86-NF5-009-010		PANEL,FUN
12	86-NF5-019-110		KEY,DSP
13	86-NF5-063-010		KEY,RDS<EXCEPT 800V>
14	86-NF5-004-010		WINDOW,DISPLAY<800V>
14	86-NF5-062-010		WINDOW,DISPLAY (RDS)<EXCEPT 800V>
15	87-063-165-010		OIL-DMPR,150
16	86-NF5-010-010		KEY,POWER
17	86-NF5-005-010		WINDOW,CD
18	86-NF5-018-010		KEY,OPEN
19	86-NF5-016-010		KEY,PLAY
20	86-NFF-015-010		KEY,KARAOKE<EXCEPT 800V>
20	86-NF5-017-010		KEY,KARAOKE<800V>
21	86-NF5-011-010		KEY ASSY,FUN
22	86-NF6-050-010		KNOB,RTRY MIC M
23	82-NE6-067-010		BADGE,AIWA 30N
24	86-NF5-030-010		PANEL,TRAY E
25	86-NF6-007-010		WINDOW,TOP
26	86-NF6-002-010		CABI,STEEL<800V>

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
26	86-NF6-057-010		CABI,STEEL G<EXCEPT 800V>
27	86-NF5-074-010		PANEL,REAR EEZBNE (AP1)<AP1MK3EZ>
27	86-NF5-072-010		PANEL,REAR EEZBNE (RDS)<820EZ>
27	86-NF5-039-010		PANEL,REAR VJBNM<800V>
⚠ 28	87-050-016-010		AC CORD ASSY,E<EXCEPT 800V>
⚠ 28	87-050-079-010		AC CORD ASSY,E BLK<800V>
29	87-085-185-010		BUSHING,AC CORD(E) CM-22B
30	81-532-080-010		LBL,CASS-COMPT
31	82-NF5-227-010		HLDR,LOCK 2N(*)
32	82-NF5-228-010		SPR-C,LOCK
33	82-NF5-229-010		PLATE,LOCK(*)
34	82-NF5-226-010		HLDR,LOCK 1N(*)
35	80-VT1-202-010		FELT,12.5-15.5-2
36	87-085-221-010		FOOT, H 13.5
37	87-084-077-010		RIVET, NYL3.5-4.5
A	87-067-585-010		BVTT+4-6
B	87-067-584-010		BVT2+3-6 W/O SLOT
C	87-067-703-010		BVT2+3-10 W/O SLOT
D	87-571-032-410		VIT+2-3
E	87-078-083-010		BVTT+4-8 SWCH16A SEMS
F	82-NE8-215-010		W,4.2-6.8-0.18
G	87-078-084-010		BVTT+3-6 W/CONVEX
H	87-067-581-010		BVT2+3-15 W/O SLOT
I	87-067-579-010		BVT2+3-8 W/O SLOT
J	87-067-633-010		BVT2+3-8 W/O SLOT W/CONVEX
K	87-067-716-010		BVTT+3-6 BLK
L	87-591-094-410		QIT+3-6
M	87-721-097-410		QT2+3-12 W/O SLOT
N	87-067-641-010		UTT2+3-8 W/O SLOT BLK

TAPE MECHANISM EXPLODED VIEW 1/1


14
15
B
B
30
A
42
PH (DECK 1)
RPH (DECK 2)
16
12
13
17
11
10
18
(DECK 2)
9
7
3
18
(DECK 1)
19
2
5
6
A
4
20
HEAD 1 C.B (DECK 1)
HEAD 2 C.B (DECK 2)
22
57
(DECK 1)
21
24
29
(DECK 2)
25
23
26
29 (DECK 2)
A
27
1
28

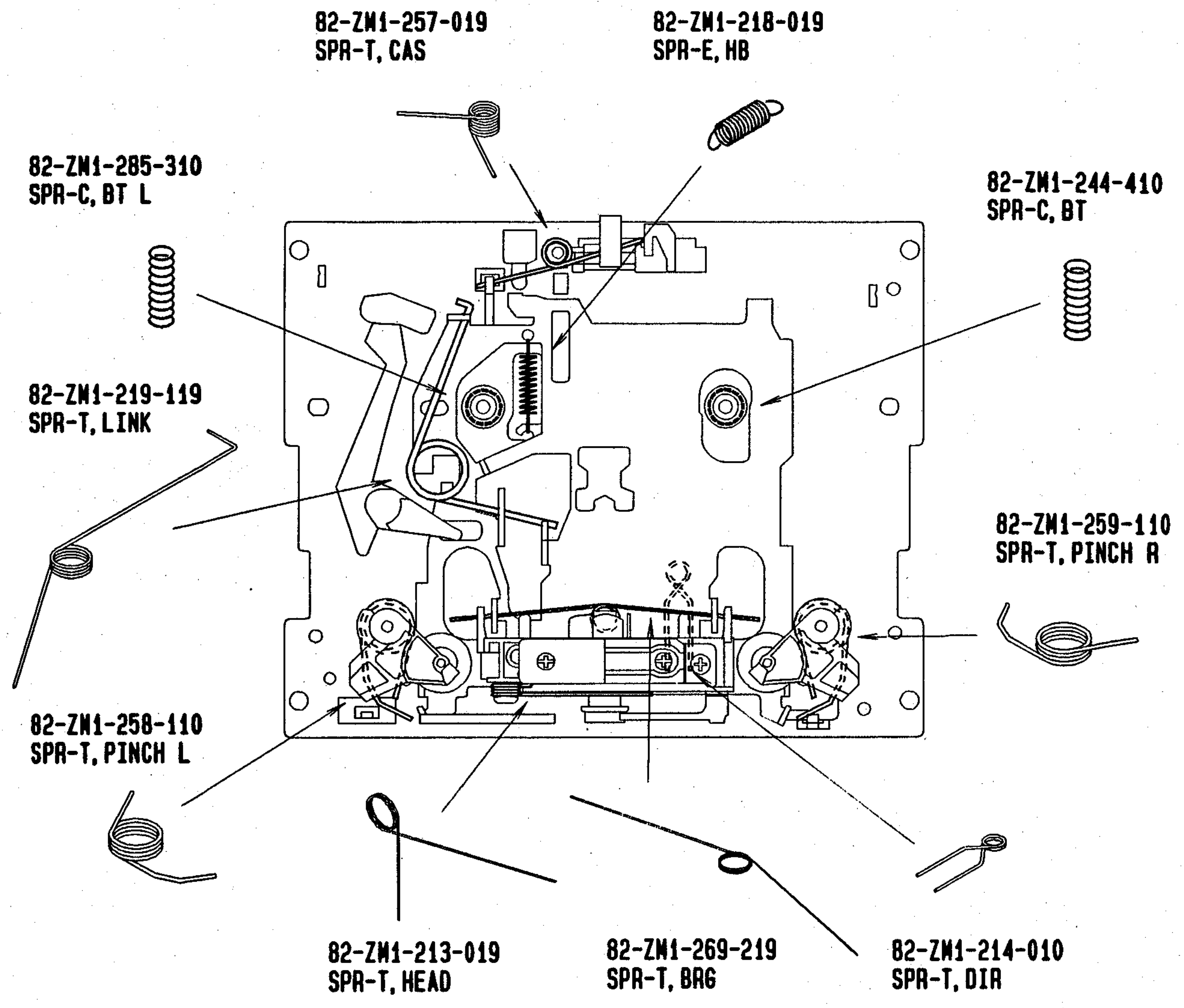


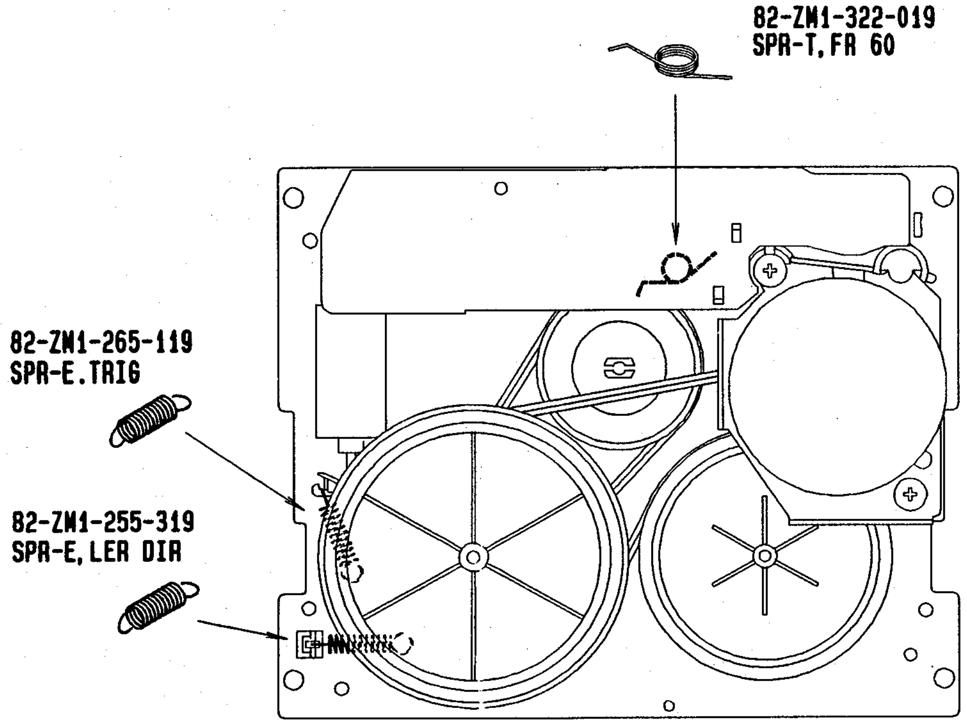
TAPE MECHANISM PARTS LIST 1/1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-ZM3-301-519		CHAS ASSY,M2
2	82-ZM1-258-110		SPR-T,PINCH L
3	82-ZM1-345-019		LVR ASSY,PINCH L W
4	82-ZM1-333-010		PLATE,LINK 2
5	82-ZM1-266-11K		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-81K		CHAS,HEAD
8	82-ZM3-307-019		CUSH-G,DIA3.7-8-3.2
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-119		SPR-T,LINK
11	82-ZM1-210-119		GEAR,H T
12	82-ZM1-213-019		SPR-T,HEAD
13	82-ZM1-207-619		GUIDE,TAPE
14	82-ZM1-283-310		S-SCREW,AZIMUTH
15	82-ZM1-314-119		PLATE,HEAD
16	82-ZM1-208-119		HLDR,HEAD
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM1-263-110		LVR,EJECT L (DECK 1)
18	82-ZM1-264-010		LVR,EJECT R (DECK 2)
19	82-ZM1-222-21K		LVR,PLAY
20	82-ZM1-217-319		REEL TABLE
21	82-ZM1-244-510		SPR-C,BT
22	82-ZM1-285-310		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM1-241-319		LVR,MC
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-346-019		LVR ASSY,PINCH R W
28	82-ZM1-259-110		SPR-T,PINCH R
29	82-ZM1-240-11K		LVR,REC (DECK 2)
30	82-ZM1-298-010		SPR-P,EARTH
31	82-ZM1-255-319		SPR-E,LVR DIR
32	82-ZM3-305-01K		GEAR,CAM M2
33	82-ZM1-227-21K		LVR,TRIG
34	82-ZM3-306-11K		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-31K		GEAR,REEL
42	87-046-355-019		HEAD,PH HADKH2529B(PH)
42	87-046-356-019		HEAD,RPH HADKH5581B(RPH)
43	82-ZM1-225-21K		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM1-228-810		SLIP DISK ASSY
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-238-81K		FLY-WHL ASSY,R (DECK 2)
47	82-ZM3-210-71K		FLY-WHL ASSY,R2 (DECK 1)
48	82-ZM1-235-51K		FLY-WHL ASSY,L (DECK 2)
48	82-ZM3-208-61K		FLY-WHL ASSY,L2 (DECK 1)
49	82-ZM3-329-210		BELT,SBU R2
50	82-ZM1-245-210		HLDR,IC
51	87-045-347-019		MOT,SHU2L 70(M1)
52	82-ZM3-221-010		PULLEY,MOT 2M
53	82-ZM1-288-019		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
55	82-ZM3-304-110		PULLEY,COUPLER (DECK 1)
56	82-ZM3-328-110		BELT,SBU P2
57	82-ZM3-216-019		SHAFT,COUPLER N(DECK 1)
A	82-ZM1-315-010		S-SCREW,GVIDE TAPE
B	80-ZM6-207-019		V+1.6-7
C	82-ZM3-318-019		S-SCRW MOTOR M2
D	87-067-972-019		PW,1.05-3-0.25 SLT

SPRING APPLICATION POSITION

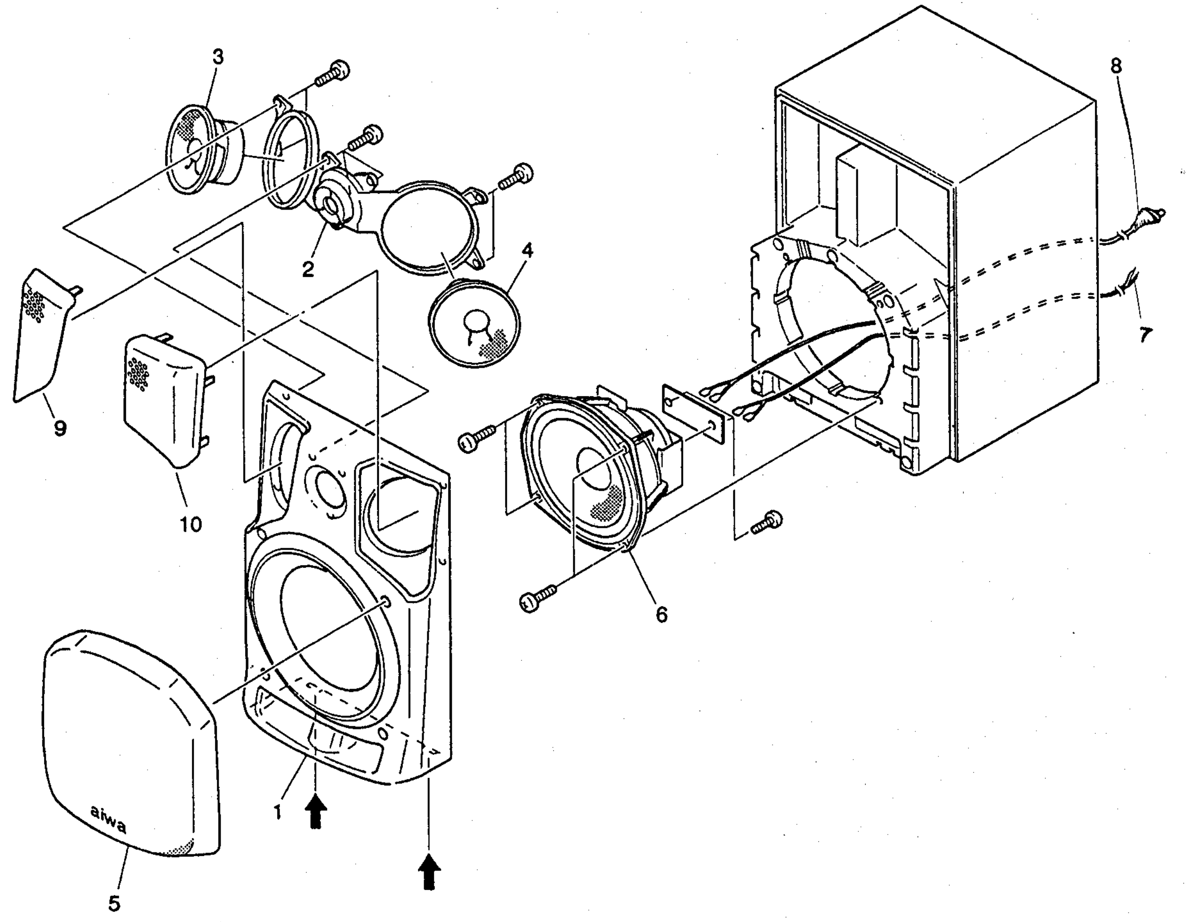

82-ZM1-257-019
SPR-T, CAS
82-ZM1-218-019
SPR-E, HB
82-ZM1-285-310
SPR-C, BT L
82-ZM1-244-410
SPR-C, BT
82-ZM1-219-119
SPR-T, LINK
82-ZM1-259-110
SPR-T, PINCH R
82-ZM1-258-110
SPR-T, PINCH L
82-ZM1-213-019
SPR-T, HEAD
82-ZM1-269-219
SPR-T, BRG
82-ZM1-214-010
SPR-T, DIR


82-ZM1-322-019
SPR-T, FR 60
82-ZM1-265-119
SPR-E. TRIG
82-ZM1-255-319
SPR-E, LER DIR

SPEAKER DISASSEMBLY INSTRUCTIONS

矢印の位置にマイナスドライバーを差し込んで、パネルをはずして、各々のスピーカー・ユニットのビスを取り、スピーカー・ユニットをはずしてください。

Insert a flat - bladed screwdriver into the position indicated by the arrows and remove the panel.
Remove the screws of each speaker unit and then remove the speaker units.


3
2
4
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1
5
aiwa

SPEAKER PARTS LIST 1/1 (SX-FNV800)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NS5-001-019		PANEL FR
2	86-NS5-028-019		HLDR SQ ASSY
3	86-NS5-604-019		SPEAKER TWEETER
4	86-NS5-606-019		SPEAKER
5	86-NS5-007-019		GRILLE FRAME ASSY
6	86-NS5-602-019		SPEAKER WOOFER
7	83-NS5-613-019		SPEAKER CORD ASSY
8	85-NS6-611-019		SPEAKER CORD Y/B
9	86-NS5-011-019		PROTECTOR TW L
10	86-NS5-010-019		PROTECTOR TW R

ACCESSORIES / PACKAGE LIST

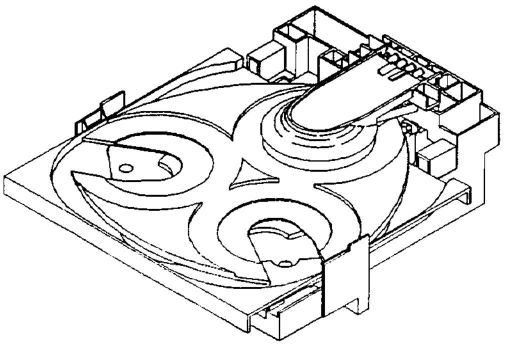
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	86-NF5-915-018		IB,E(EGFSI)NE<820EZ>
1	86-NF5-916-019		IB,V-M<V>
1	86-NF5-917-019		IB,E(EG)NE<NAP1MK3EZ>
2	85-NF5-631-018		RC-T501<V>
2	85-NF5-633-018		RC-T501<820EZ,NAP1MK3EZ>
3	87-006-225-019		AM LOOP ANT NC2
4	87-043-106-019		FM, WIRE ANT (Z)<820EZ,NAP1MK3EZ>
4	87-043-115-019		FEEDER-ANT, FM<V>

aiwa

aiwa
SERVICE

4ZG-1
4ZG-1A
4ZG-1B
4ZG-1Z



CD MECHANISM

SERVICE MANUAL

• BASIC CD MECHANISM: KSM-2 131 BAM
3ZG-2 C1 / 3ZG-2 C2 / 3ZG-2 C5
•TYPE: English

BASIC NAME		DERIVATION NAME							
4ZG-1	*1	–	–	–	–	WR	–	–	–
	*2	G	D	F	R	–	V3L	V4L	V5
4ZG-1A		G	D	–	–	–	–	–	–
4ZG-1B		G	D	–	–	–	–	–	–
4ZG-1Z		–	D	–	–	–	–	–	–

- ●*1,*2, have the same BASIC NAME but the board structures are different. The CD BLOCK,VCD BLOCK of the WR are shown on the SERVICE MANUAL of each DERIVATION NAME .
- ●This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.
- ●For different version of mechanism that may be introduced since the issue of this manual, only the new or modified points be discussed.

S/M Code No. 09-965-128-10T

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4ZG-1 <VCD>

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4ZG-1 <B>

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4ZG-1 <Z>

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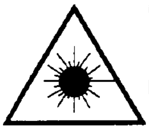
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid expo-sure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainit-ulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radi-ation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1 AGD

SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1 (ORIGINAL MODEL)
4ZG-1A (SONY IC MODEL)
4ZG-1B (TOSHIBA IC MODEL)
4ZG-1Z (SANYO IC MODEL)

BASIC NAME		**DERIVATION NAME**							
4ZG-1	*1	—	—	—	—	WR	—	—	—
	*2	G	D	F	R	—	V3L	V4L	V5
4ZG-1A		G	D	—	—	—	—	—	—
4ZG-1B		G	D	—	—	—	—	—	—
4ZG-1Z		—	D	—	—	—	—	—	—

NOTE:
- *1 and *2 have the same BASIC NAME but the board structures are different.
- The CD BLOCK, VCD BLOCK of the WR is shown on the SERVICE MANUAL of each DERIVATION NAME.
- Model 4ZG-1 A, B and Z has "F" as the standard installation.

BOARD NAME / **BASIC NAME**		**3CD C.B**	**LED C.B**	**T-T C.B**	**MOTOR C.B**	**MAIN VCD C.B**	**CD MECHA C.B**	**VCD C.B**	**DRIVE C.B**
4ZG-1	*1	—	—	○	—	—	—	—	○
4ZG-1	*2	—	○	○	—	○	○	○ (EXCEPT V5)	—
4ZG-1A		○	○	○	○	—	—	—	—
4ZG-1B		○	○	○	○	—	—	—	—
4ZG-1Z		○	○	○	—	—	—	—	○

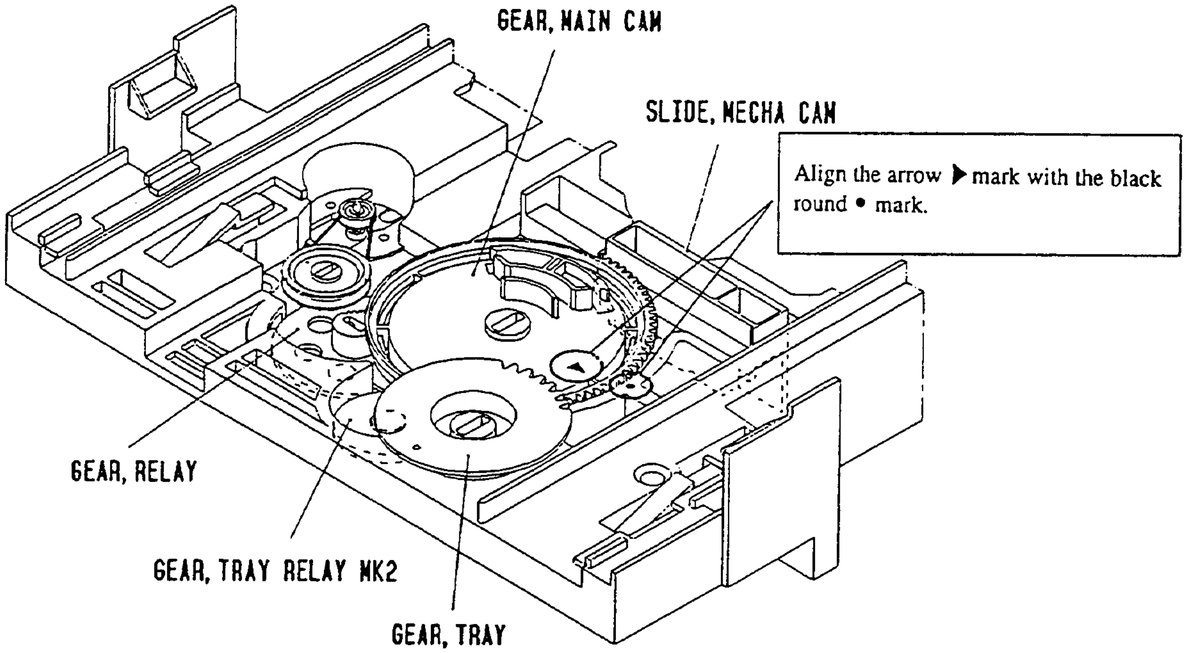
DERIVATION NAME

G:	Supporting the CD graphic feature
D:	Digital output function
F:	CD WINDOW Flash function (LED: AMBER/GREEN)
R:	Round Tray
WR:	With out Video CD and CD graphic board.
V3L:	Supporting the video CD function PAL
V4L:	Supporting the video CD function PAL
V5:	Supporting the video CD function

How to Adjust the Rotating Phase of the Gear, Main Cam

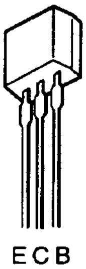
1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.

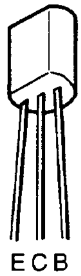

GEAR, MAIN CAM
SLIDE, MECHA CAM
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

Align the arrow ▶ mark with the black round ● mark.

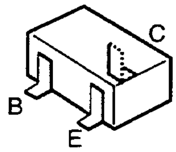
TRANSISTOR ILLUSTRATION



2SA933

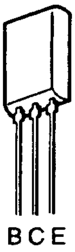


2SA1296
2SA1318
2SC1815
2SC2001
2SD655
2SD2172

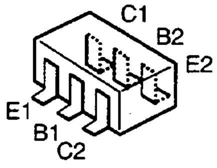


2SA1037
2SA1162
2SA1362
2SA1576
2SC2712
2SC3326
2SC4081
2SD1383

DTA123JK
DTA144TK
DTC114TK
DTC123JK
DTC124XK
DTC143TK
RN1441



2SD2005


C1
B2
E2
E1
B1
C2

HN1C03

4ZG-1

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	SC-L48-000-000		IC,CL480<V3L>
	S4-730-42X-010		IC,HD6473042F16(5EULF6)<V4L>
	SC-XD1-178-Q00		IC,CXD1178Q<V3L>
	SA-T27-C51-2R1		IC,AT27C512R-15JC<V3L>
	SX-D11-86X-010		IC,CXD1186CR(5EUNFC)<V4L>
	SC-008-K81-R10		IC,BR6265AF-10LL(5EUMFS)<V4L>
	ST-C51-425-6BJ		IC,TC514256BJ-70<V3L>
	SC-032-K81-MA0		IC,M5M5256CFP-70LL(5EUMFS)<V4L>
	87-001-948-080		IC,PST572CMT(5EUBFP)<V4L>
	SD-493-07X-010		IC,HD49307(5EUNFH)<V4L>
	SM-C68-MC7-05C		IC,MC68HC705C8ACP<V3L>
	87-002-259-080		IC,uPD6376GS<V3L>
	87-001-607-080		IC,BA4558F<V3L>
	82-NV1-628-080		IC,CXA1645M(5EUBFC)<V3L,V4L>
	SP-D63-210-010		IC,UPD63210GT-E1(5EUNFU)<V4L>
	SS-N74-HCU-04D		IC,SN74HCU04DR<V3L>
	S1-010-XXX-010		IC,UPD61010AGD-LBD(5EULF6)<V4L>
	SC-170-CXX-010		IC,TC170C100AF-001(5EUKFT)<V4L>
	SC-256-KG1-T10		IC,TC514260BJ-70(5EULMD)<V4L>
	SC-000-002-000		IC,TC514260BJ-70(5EULMD)<V4L>
	SL-C29-32X-010		IC,TLC2932IPW(5EUNFT)<V4L>
	87-017-745-019		IC,CXA1782BQ<EXCEPT V5,WR>
	87-002-783-110		IC,CXD2500BQ<EXCEPT WR>
	87-A20-257-049		IC,BA6791FP<V5>
	87-070-120-049		IC,BA6897 FP<EXCEPT V5,WR>
	87-070-429-019		IC,NJM2244L<EXCEPT V5,WR>
	87-002-532-019		IC,PQ05RF11<V5>
	87-017-825-019		IC,GP1F32T<D,V5>
	87-001-873-019		IC,LB1644<V5>
	84-ZG1-639-010		C-IC,MB89627<V5>
	ST-C74-HC2-570		IC,TC74HC257<V3L>
	83-NFT-618-010		IC,UPD78044BGF<V3L>
	85-MAR-614-010		IC,UPD78044BGF-025<V4L>
	87-070-430-019		IC,LA6530<EXCEPT V5,WR>
	87-017-543-089		IC,PST 600D<V5>
	87-A20-255-049		C-IC,SN74LV373NS<V5>
	87-A20-251-049		C-IC,BR6265BF-N10SL<V5>
	87-A20-252-049		C-IC,SN74LV00NS<V5>
	87-A20-253-049		C-IC,SN74LV04NS<V5>
	87-A20-254-049		C-IC,SN74LV32NS<V5>
	87-A20-244-010		C-IC,CL484<V5>
	87-020-881-089		IC,NJM78L05A<EXCEPT V5,WR>
	87-A20-200-040		C-IC,HM514260CJ7/CLJ7<V5>
	87-017-888-089		IC,NJM4558MD<V4L>
	84-ZG1-640-049		C-IC,LH5317<V5>
	87-A20-256-049		C-IC,PQ20VZ5U<V5>
	87-A20-247-019		C-IC,BU1417AK<V5>
	87-017-802-010		IC,LC7872E<G>
	87-A20-248-049		C-IC,BU2173F<V5>
	87-017-803-010		IC,LC32464P-80<G>
	87-A20-258-040		C-IC,SM5877AM<V5>
TRANSISTOR			
	SC-408-1XX-010		TR,2SC4081(5EQQ2S)<V4L>
	S1-441-XXX-010		TR,RN1441-A(5EQQRN)<V4L>
	SA-157-6XX-010		TR,2SA1576(5EQQ2S)<V4L>
	89-111-625-089		C-TR,2SA1162GR<EXCEPT V5,WR>
	87-026-237-089		C-TR,DTC124XK<EXCEPT WR>
	87-327-125-089		C-TR,2SC2712 GR<V5>
	89-113-625-089		C-TR 2SA 1362 GR(TAPG)<V5>
	89-327-125-089		C-TR,2SC2712GR<EXCEPT WR>
	89-112-965-089		TR,2SA1296GR<EXCEPT WR>
	87-026-608-089		C-TR,DTC 123 JK<F>
	89-324-585-010		TR,2SC2458<V3L>
	89-333-266-089		C-TR,2SC3326B<EXCEPT V5,WR>
	87-026-580-089		C-TR,DTA123JK<EXCEPT WR>
	87-026-470-089		TR,HN1C03 F B<V5>
	89-318-155-089		TR,2SC1815 GR<V5>
DIODE			
	S0-041-480-000		DIODE,1N4148<V3L>
	S1-305-700-283		DIODE,DA115(5EDQDD)<V4L>
	S0-240-010-000		DIODE,1N4001<V3L>
	SA-P20-2UX-010		DIODE,DAP202U(5EDQDD)<V4L>
	87-002-608-089		DIODE,DSF10TC<V4L>
	87-017-430-090		DIODE,RK14<V3L>
	87-020-465-089		DIODE,ISS133<EXCEPT V5,WR>
	SM-TZ2-7B0-000		ZENER,MTZ2.7B<V3L>
	87-020-027-089		C-DIODE 1SS184<V5>
	87-A40-180-049		C-DIODE SB07-015 C<V5>
	87-A40-196-089		C-ZENER UDZ6.2 B<V5>
MAIN VCD C.B<V3L,V4L>			
C101	87-012-140-089		C-CAP,S 470P-50 CH<EXCEPT WR>
C102	87-010-194-089		C-CAP,S 0.047-25 F
C103	87-010-178-089		C-CAP,S 1000P-50 B
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-010-384-089		CAP,E 100-25 SME
C106	87-010-196-089		C-CAP,S 0.1-25 F
C107	87-010-314-089		C-CAP,S 22P-50 CH
C108	87-010-314-089		C-CAP,S 22P-50 CH
C110	87-010-221-089		CAP,E 470-10 11L
C111	87-010-320-089		C-CAP,S 68P-50 CH
C112	87-010-196-089		C-CAP,S 0.1-25 F<V4L>
C112	87-016-463-089		C-CAP,S 0.33-16 B<V3L>
C113	87-010-260-089		CAP,E 47-25 SME
C114	87-010-498-049		CAP,E 10-16 GAS
C115	87-010-498-049		CAP,E 10-16 GAS<G>
C116	87-010-196-089		C-CAP,S 0.1-25 F
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-553-049		CAP,E 47-16 GAS<V4L>
C119	87-010-553-049		CAP,E 47-16 GAS
C120	87-010-197-089		C-CAP,S 0.01-25 B
C121	87-010-384-089		CAP,E 100-25 SME<V4L>
C122	87-010-320-089		C-CAP,S 68P-50 CH<D>
C123	87-010-401-089		CAP,E 1-50 SME
C124	87-A10-011-019		CAP,E 2200-25 SMG
C125	87-010-322-089		C-CAP,S 100P-50 CH
C126	87-010-178-089		C-CAP,S 1000P-50 B
C127	87-010-314-089		C-CAP,S 22P-50 CH<G>
C128	87-010-320-089		C-CAP,S 68P-50 CH
C129	87-010-263-089		CAP,E 100-10 SME<D>
C130	87-010-197-089		C-CAP,S 0.01-25 B<D>
C131	87-010-197-089		C-CAP,S 0.01-25 B
C132	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-154-089		C-CAP,S 10P-50 CH<V4L>
C201	87-010-382-089		CAP,E 22-25 SME
C202	87-010-197-089		C-CAP,S 0.01-25 B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C203	87-010-382-089		CAP,E 22-25 SME
C204	87-010-381-089		CAP,E 330-16 SME
C205	87-010-196-089		C-CAP,S 0.1-25 F
C206	87-010-196-089		C-CAP,S 0.1-25 F
C207	87-010-498-049		CAP,E 10-16 GAS<F>
C208	87-010-405-089		CAP,E 10-50 SME
C301	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-381-089		CAP,E 330-16 SME<V4L>
C307	87-010-553-049		CAP,E 47-16 GAS
C308	87-010-498-049		CAP,E 10-16 GAS
C309	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C310	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C311	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C312	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C313	87-010-384-089		CAP,E 100-25 SME<V4L>
C315	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C316	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C317	87-010-197-089		C-CAP,S 0.01-25 B
C318	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-405-089		CAP,E 10-50 SME<G>
C402	87-010-314-089		C-CAP,S 22P-50 CH<G>
C403	87-010-315-089		C-CAP,S 27P-50 CH<G>
C406	87-010-384-089		CAP,E 100-25 SME<G>
C407	87-010-384-089		CAP,E 100-25 SME<G>
C408	87-010-196-089		C-CAP,S 0.1-25 F<G>
C409	87-010-196-089		C-CAP,S 0.1-25 F<G>
CON6	83-NFT-628-019		CONN ASSY,8P<V3L>
EM101	87-008-474-089		F-BEAD,EMI BL02RN1
EM102	87-008-474-089		F-BEAD,EMI BL02RN1
FC1	85-NFT-612-019		FF-CABLE,30P-1.0<V4L>
FC2	88-912-131-219		FF-CABLE,12P 1.25
FC3	85-MAR-617-019		FF-CABLE,6P-1.25
J101	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-003-149-089		COIL,47UH
L102	87-003-149-089		COIL,47UH
L103	87-003-143-089		COIL,4.7UH
L401	87-003-149-089		COIL,47UH<G>
L402	87-003-149-089		COIL,47UH<G>
M401	87-045-305-019		MOTOR, RF-500TB
PR101	87-026-689-089		PROTECTOR,1A 60V 491
SW201	87-036-109-019		SW,PUSH SPPB 61
SW202	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-270-089		VIB,XTAL 16.9344MHZ
X201	89-MX1-704-089		CERA LOCK(MU)3.9MHZ
X401	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>

MAIN VCD C.B<V5>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-197-089		C-CAP,S 0.01-25 B
C102	87-010-550-049		CAP,E 100-6.3 GAS
C103	87-010-318-089		C-CAP,S 47P-50 CH
C104	87-010-197-089		C-CAP,S 0.01-25 B
C105	87-010-318-089		C-CAP,S 47P-50 CH
C106	87-010-549-049		CAP,E 47-6.3 GAS
C107	87-012-156-089		C-CAP,S 220P-50 CH
C108	87-010-184-089		C-CAP,S 3300P-50 B
C109	87-010-194-089		C-CAP,S 0.047-25 F
C110	87-012-140-089		C-CAP,S 470P-50 CH
C111	87-010-197-089		C-CAP,S 0.01-25 B
C112	87-016-461-089		C-CAP,S 0.47-16 F
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-550-049		CAP,E 100-6.3 GAS
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-561-049		CAP,E 100-16 GAS
C117	87-010-562-049		CAP,E 220-10 GAS
C118	87-010-553-049		CAP,E 47-16 GAS
C119	87-010-197-089		C-CAP,S 0.01-25 B
C120	87-010-555-089		CAP,E 100-10 GAS
C121	87-010-197-089		C-CAP,S 0.01-25 B
C201	87-010-499-049		CAP,E 22-6.3 GAS
C202	87-010-197-089		C-CAP,S 0.01-25 B
C203	87-010-196-089		C-CAP,S 0.1-25 F
C204	87-010-316-089		C-CAP,S 33P-50 CH
C205	87-010-316-089		C-CAP,S 33P-50 CH
C206	87-010-499-049		CAP,E 22-6.3 GAS
C207	87-010-197-089		C-CAP,S 0.01-25 B
C208	87-010-197-089		C-CAP,S 0.01-25 B
C209	87-010-197-089		C-CAP,S 0.01-25 B
C210	87-010-197-089		C-CAP,S 0.01-25 B
C211	87-010-197-089		C-CAP,S 0.01-25 B
C212	87-010-318-089		C-CAP,S 47P-50 CH
C301	87-010-549-049		CAP,E 47-6.3 GAS
C302	87-010-549-049		CAP,E 47-6.3 GAS
C304	87-010-197-089		C-CAP,S 0.01-25 B
C305	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-197-089		C-CAP,S 0.01-25 B
C307	87-010-197-089		C-CAP,S 0.01-25 B
C308	87-010-197-089		C-CAP,S 0.01-25 B
C309	87-010-197-089		C-CAP,S 0.01-25 B
C310	87-010-197-089		C-CAP,S 0.01-25 B
C311	87-010-197-089		C-CAP,S 0.01-25 B
C312	87-010-197-089		C-CAP,S 0.01-25 B
C313	87-010-318-089		C-CAP,S 47P-50 CH
C314	87-010-196-089		C-CAP,S 0.1-25 F
C315	87-010-196-089		C-CAP,S 0.1-25 F
C316	87-010-549-049		CAP,E 47-6.3 GAS
C317	87-010-314-089		C-CAP,S 22P-50 CH
C319	87-010-314-089		C-CAP,S 22P-50 CH
C320	87-010-196-089		C-CAP,S 0.1-25 F
C321	87-010-550-049		CAP,E 100-6.3 GAS
C322	87-010-197-089		C-CAP,S 0.01-25 B
C323	87-010-550-049		CAP,E 100-6.3 GAS
C324	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-197-089		C-CAP,S 0.01-25 B
C402	87-010-550-049		CAP,E 100-6.3 GAS
C403	87-010-197-089		C-CAP,S 0.01-25 B
C404	87-012-140-089		C-CAP,S 470P-50 CH
C405	87-010-322-089		C-CAP,S 100P-50 CH
C406	87-012-140-089		C-CAP,S 470P-50 CH
C407	87-016-350-049		CAP,E 470-4 MA GAS
C408	87-010-196-089		C-CAP,S 0.1-25 F
C409	87-010-197-089		C-CAP,S 0.01-25 B
C410	87-010-197-089		C-CAP,S 0.01-25 B
C411	87-010-550-049		CAP,E 100-6.3 GAS
C412	87-010-197-089		C-CAP,S 0.01-25 B
C413	87-010-314-089		C-CAP,S 22P-50 CH
C414	87-010-316-089		C-CAP,S 33P-50 CH
C415	87-010-499-049		CAP,E 22-6.3 GAS
C416	87-010-197-089		C-CAP,S 0.01-25 B
C418	87-010-197-089		C-CAP,S 0.01-25 B
C420	87-010-196-089		C-CAP,S 0.1-25 F
C421	87-012-140-089		C-CAP,S 470P-50 CH
C422	87-010-184-089		C-CAP,S 3300P-50 B
C422	87-010-184-089		C-CAP,S 3300P-50 B
C423	87-010-175-089		C-CAP,S 560P-50 SL
C424	87-010-317-089		C-CAP,S 39P-50 CH
C425	87-012-140-089		C-CAP,S 470P-50 CH
C501	87-010-549-049		CAP,E 47-6.3 GAS
C502	87-010-196-089		C-CAP,S 0.1-25 F
C503	87-010-318-089		C-CAP,S 47P-50 CH
C505	87-010-313-089		C-CAP,S 18P-50 CH
C506	87-010-313-089		C-CAP,S 18P-50 CH
C507	87-010-197-089		C-CAP,S 0.01-25 B
C508	87-010-178-089		C-CAP,S 1000P-50 B
C509	87-010-178-089		C-CAP,S 1000P-50 B
C510	87-010-178-089		C-CAP,S 1000P-50 B
C511	87-010-178-089		C-CAP,S 1000P-50 B
C512	87-010-498-049		CAP,E 10-16 GAS
C513	87-010-498-049		CAP,E 10-16 GAS
C514	87-010-318-089		C-CAP,S 47P-50 CH
C515	87-010-318-089		C-CAP,S 47P-50 CH
C516	87-010-196-089		C-CAP,S 0.1-25 F
C599	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-561-049		CAP,E 100-16 5L
C602	87-010-432-049		CAP,E 10-16 OS

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-196-089		C-CAP,S 0.1-25 F
C605	87-A10-222-049		CAP,E 22-10 OS
C606	87-010-196-089		C-CAP,S 0.1-25 F
C607	87-012-140-089		C-CAP,S 470P-50 CH
C608	87-010-196-089		C-CAP,S 0.1-25 F
J401	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-005-781-089		C-COIL,47UH FLC32C
L201	87-005-781-089		C-COIL,47UH FLC32C
L202	87-005-781-089		C-COIL,47UH FLC32C
L301	87-005-781-089		C-COIL,47UH FLC32C
L302	87-005-781-089		C-COIL,47UH FLC32C
L303	87-005-781-089		C-COIL,47UH FLC32C
L401	87-005-196-089		COIL,10UH
L402	87-005-781-089		C-COIL,47UH FLC32C
L404	87-005-190-089		COIL,3.3UH
L405	87-005-189-089		COIL,2.7UH
L501	87-005-781-089		C-COIL,47UH FLC32C
L601	87-005-469-089		COIL,4.7UH
L602	87-A50-095-019		COIL,68UH
M201	87-045-305-019		MOTOR, RF-500TB
S101	87-036-109-019		SW,PUSH SPPB 61
S102	87-036-109-019		SW,PUSH SPPB 61
S201	87-A90-162-019		SW,SL 1-1-3 SSSU
X201	87-A70-027-089		VIB,XTAL 8MHZ 100PPM
X401	87-A70-026-089		VIB,XTAL 13.5MHZ 50PPM
X501	87-030-270-089		VIB,XTAL 16.9344MHZ

CD MECHA C.B<V3L,V4L,V5>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-154-089		C-CAP,S 10P-50 CH<EXCEPT V5>
C101	87-010-334-080		C-CAP,S 12P-50 CH<V5>
C102	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C102	87-010-184-089		C-CAP,S 3300P-50 B<EXCEPT V5>
C103	87-010-197-089		C-CAP,S 0.01-25 B<EXCEPT V5>
C103	87-010-993-089		C-CAP,S 0.056-25<V5>
C104	87-010-193-089		C-CAP,S 0.033-25 F<EXCEPT V5>
C104	87-010-993-089		C-CAP,S 0.056-25<V5>
C105	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-197-089		C-CAP,S 0.01-25 B<V5>
C107	87-010-182-089		C-CAP,S 2200P-50 B<EXCEPT V5>
C108	87-010-805-089		C-CAP,S 1-16F
C109	87-010-322-089		C-CAP,S 100P-50 CH
C110	87-010-198-089		C-CAP,S 0.022-25 B<EXCEPT V5>
C110	87-010-993-089		C-CAP,S 0.056-25<V5>
C111	87-010-551-089		CAP ELECT 33-10V SRE<EXCEPT V5>
C111	87-010-499-049		CAP,E 22-6.3 GAS<V5>
C112	87-010-322-089		C-CAP,S 100P-50 CH
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C115	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C116	87-010-182-089		C-CAP,S 2200P-50 B
C117	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C117	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C118	87-010-196-089		C-CAP,S 0.1-25 F
C119	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C119	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C120	87-010-549-089		CAP ELECT 47-6.3V
C121	87-010-549-089		CAP ELECT 47-6.3V
C122	87-010-495-089		CAP,E 2.2-35 5L<V5>
C122	87-010-497-089		CAP,E 4.7-35 5L<EXCEPT V5>
C123	87-010-549-089		CAP ELECT 47-6.3V
C125	87-010-553-089		CAP,E 47-16
C127	87-010-553-089		CAP,E 47-16
C127	87-010-549-089		CAP,E 47-6.3 GAS
C128	87-010-549-089		CAP ELECT 47-6.3V
C129	87-010-182-089		C-CAP,S 2200P-50 B
C131	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-197-089		C-CAP,S 0.01-25 B
C137	87-010-805-089		C-CAP,S 1-16F
C138	87-010-178-089		C-CAP,S 1000P-50 B
C140	87-010-805-089		C-CAP,S 1-16F<EXCEPT V5>
FC4	85-NFT-611-119		FF-CABLE,16P-1.0
M101	87-045-356-019		MOT,RF-310T A 30
M102	87-045-358-019		MOT,RF-310T A 43
R140	87-022-364-089		C-RES,S82K-1/10WF
R141	87-022-363-089		C-RES,S 68K-1/10W F
R142	87-022-363-089		C-RES,S 68K-1/10W F
R143	87-022-363-089		C-RES,S 68K-1/10W F
R144	87-022-363-089		C-RES,S 68K-1/10W F
R145	87-022-364-089		C-RES,S82K-1/10WF
SFR101	87-024-175-089		SFR,47K DIA6 V
SFR102	87-024-176-089		SFR,100K DIA6 V
SFR103	87-024-175-089		SFR,47K DIA6 V
SW101	87-036-340-019		SW,LEAF LSA-1121

T-T C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C401	87-018-214-089		CAP TC U 0.1-50 F
FC401	84-ZG1-614-119		CABLE FFC 5P-1.25
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

LED C.B<F>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
LED101	87-070-200-089		LED,SLP636C-81-S-T1<F>
LED102	87-017-350-080		LED,SEL1550CM<F>
LED103	87-017-350-080		LED,SEL1550CM<F>
LED104	87-070-200-089		LED,SLP636C-81-S-T1<F>

VCD C.B<V3L>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C2	87-010-378-010		CAP,E 10-16
C3	87-010-378-010		CAP,E 10-16
C4	87-010-374-010		CAP,E 47-10
C5	87-010-374-010		CAP,E 47-10
C9	87-010-378-010		CAP,E 10-16
C10	87-010-378-010		CAP,E 10-16
C11	87-010-378-010		CAP,E 10-16
C12	87-010-374-010		CAP,E 47-10
C13	87-010-378-010		CAP,E 10-16
C17	87-010-248-010		CAP,E 220-10
C22	87-010-374-010		CAP,E 47-10
C23	87-010-374-010		CAP,E 47-10
C32	87-010-378-010.		CAP,E 10-16
C47	87-010-248-010		CAP,E 220-10
C49	87-010-378-010		CAP,E 10-16
C52	87-010-248-010		CAP,E 220-10
C101	87-010-378-010		CAP,E 10-16
L1	SL-AL0-4NA-100		COIL,10UH
L2	SL-AL0-4NA-472		COIL,4.7UH
X1	SS-KY4-05M-000		X'TAL,40.5MHz
X2	SS-KY4-M00-000		X'TAL,4MHz
X3	SS-KY4-433-616		X'TAL,4.433616MHz

VCD C.B<V4L>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C13	87-010-367-080		CAP,E 4.7-25V(5ECEC1)
C38	87-010-075-040		CAP,E 10-16V(5ECEC1)
C40	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C44	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C47	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C48	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C51	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C54	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C56	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C58	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C81	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C128	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C133	87-010-053-810		CAP,E 1-50V(5ECEC1)
C150	87-010-075-040		CAP,E 10-16V(5ECEC1)

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C151	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C152	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C157	87-010-075-040		CAP,E 10-16V(5ECEC1)
CT1	S2-130-007-010		CAP,TRIMMER 30PF(5ECT04)
L1	S7-001-XXX-100		C-COIL,47UH(5ELQE4)
X1	S0-120-003-010		X'TAL,12.0000MHZ(5EXMA4)
X2	S0-177-343-010		X'TAL,17.73447MHZ(5EXMA4)

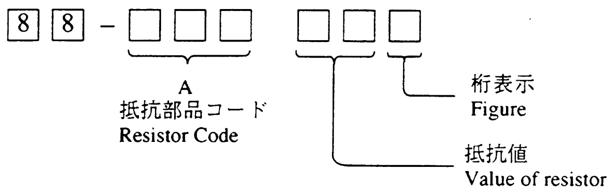
SUB C.B<V3L>

DRIVE C.B<WR>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
M1	87-045-358-019		MOT,RF-310TA 43
M2	87-045-356-019		MOT,RF-310TA 30
SW1	87-A90-042-019		SW,LEAF MSW 17310 MVPO

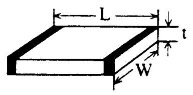
○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



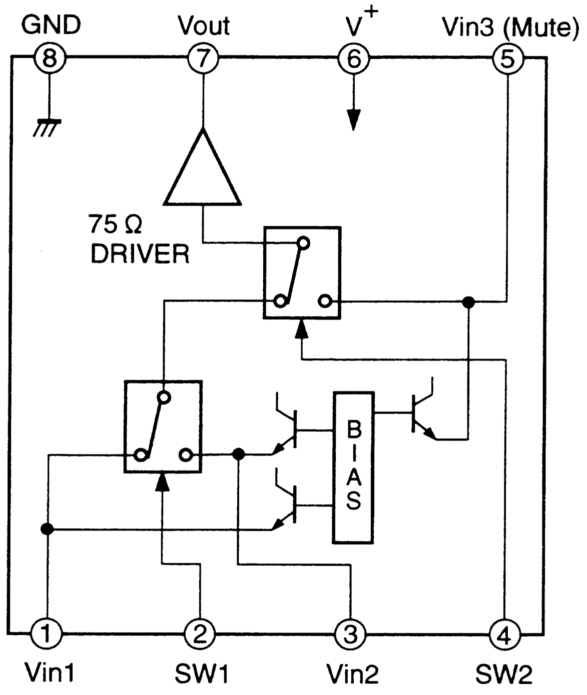
8 8 -
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

<table>
<tr><th rowspan="2">容量
Wattage</th><th rowspan="2">種類
Type</th><th rowspan="2">許容誤差
Tolerance</th><th rowspan="2">記号
Symbol</th><th colspan="4">寸法／Dimensions (mm)</th><th rowspan="2">抵抗コード ：A
Resistor Code: A</th></tr>
<tr><th>外形／Form</th><th>L</th><th>W</th><th>t</th></tr>
<tr><td>1／16W</td><td>1608</td><td>±5%</td><td>CJ</td><td rowspan="3"></td><td>1.6</td><td>0.8</td><td>0.45</td><td>108</td></tr>
<tr><td>1／10W</td><td>2125</td><td>±5%</td><td>CJ</td><td>2</td><td>1.25</td><td>0.45</td><td>118</td></tr>
<tr><td>1／8W</td><td>3216</td><td>±5%</td><td>CJ</td><td>3.2</td><td>1.6</td><td>0.55</td><td>128</td></tr>
</table>

IC BLOCK DIAGRAM

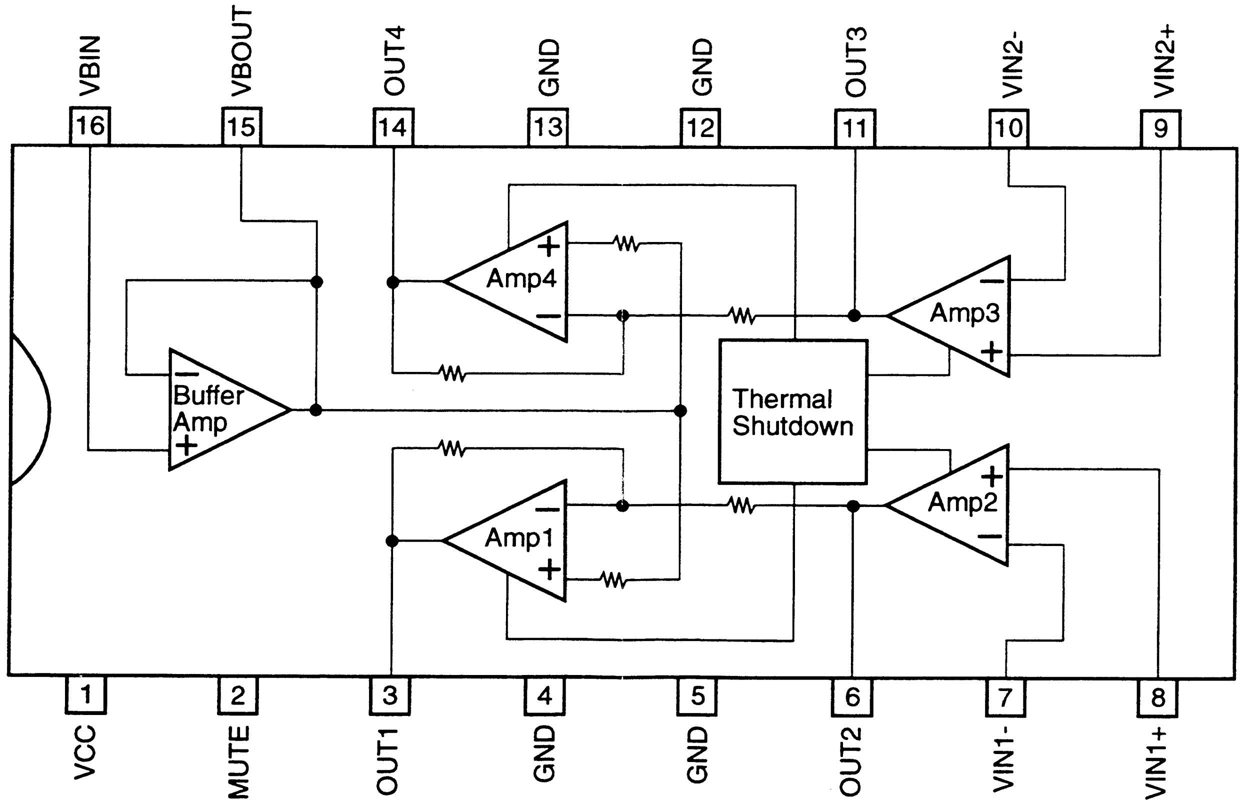
IC, NJM2244L



GND
Vout
V+
Vin3 (Mute)
8
7
6
5
75 Ω
DRIVER
B
I
A
S
1
2
3
4
Vin1
SW1
Vin2
SW2

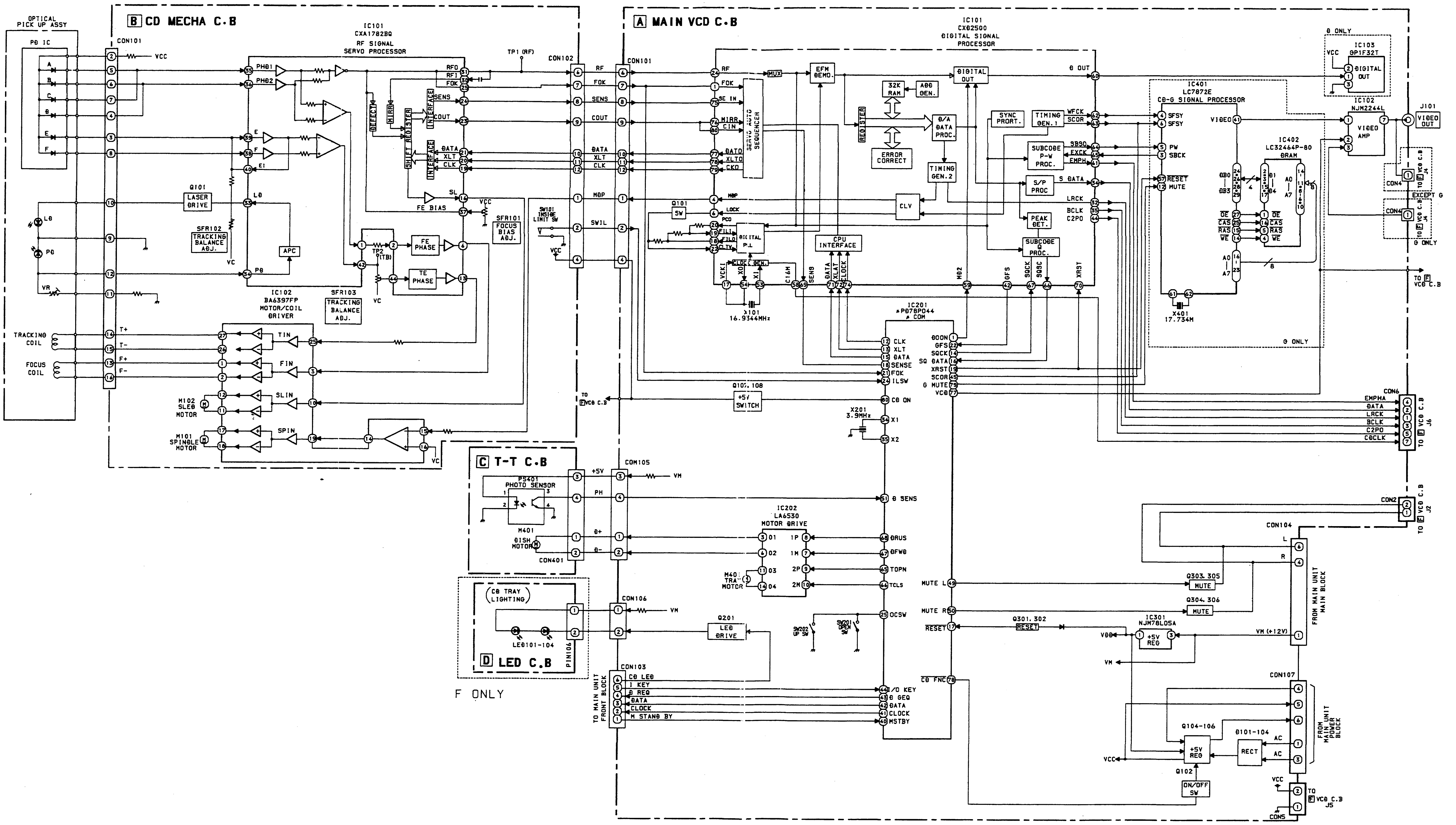
SW1	SW2	OUTPUT SIGNAL
L	L	Vin1
H	L	Vin2
L/H	H	Vin3

IC, LA6530

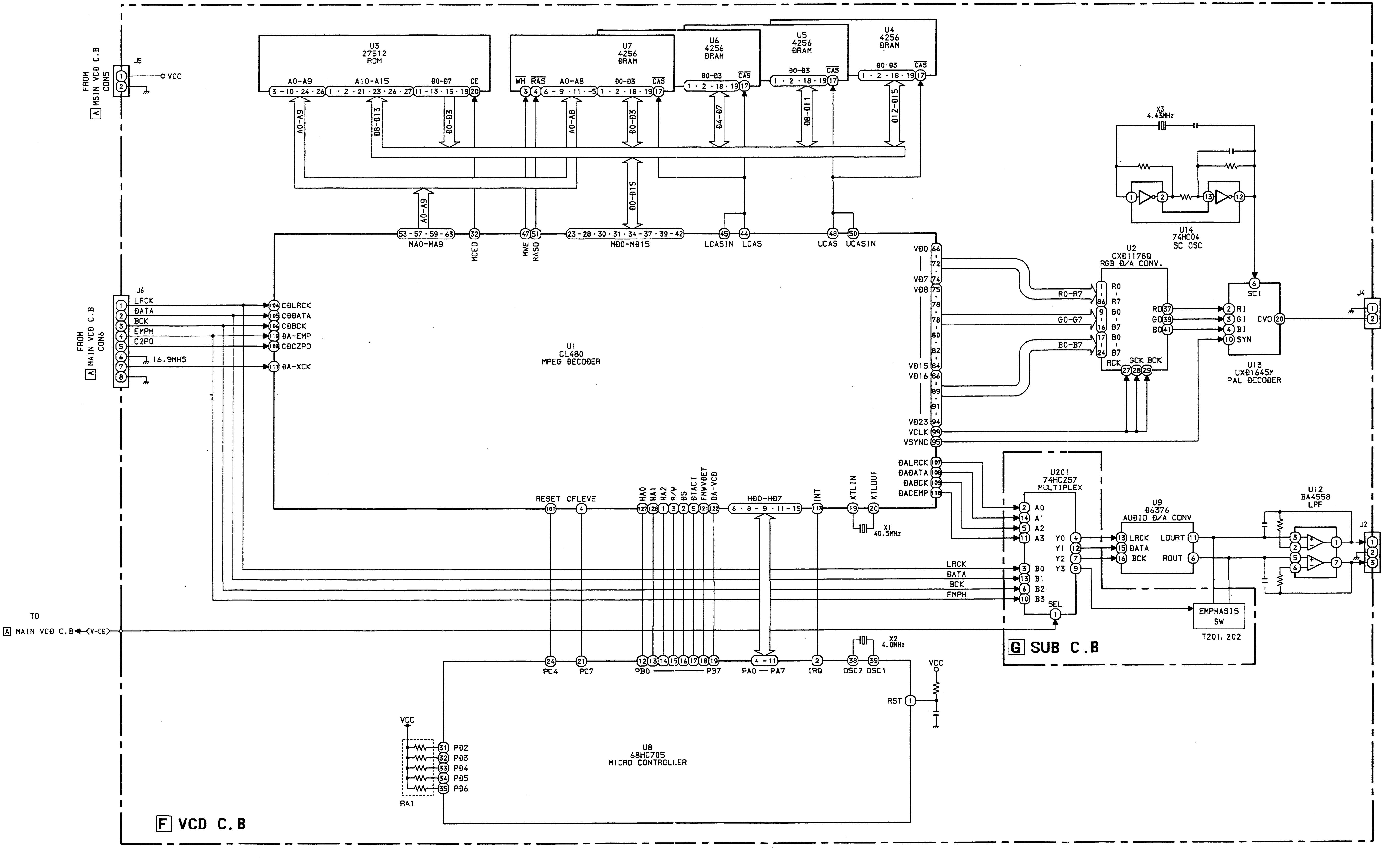


VBIN
VBOUT
OUT4
GND
GND
OUT3
VIN2-
VIN2+
16
15
14
13
12
11
10
9
Amp4
Amp3
Buffer Amp
Thermal Shutdown
Amp1
Amp2
1
2
3
4
5
6
7
8
VCC
MUTE
OUT1
GND
GND
OUT2
VIN1-
VIN1+

BLOCK DIAGRAM-1 (V3L: MAIN VCD ／ CD MECHA)

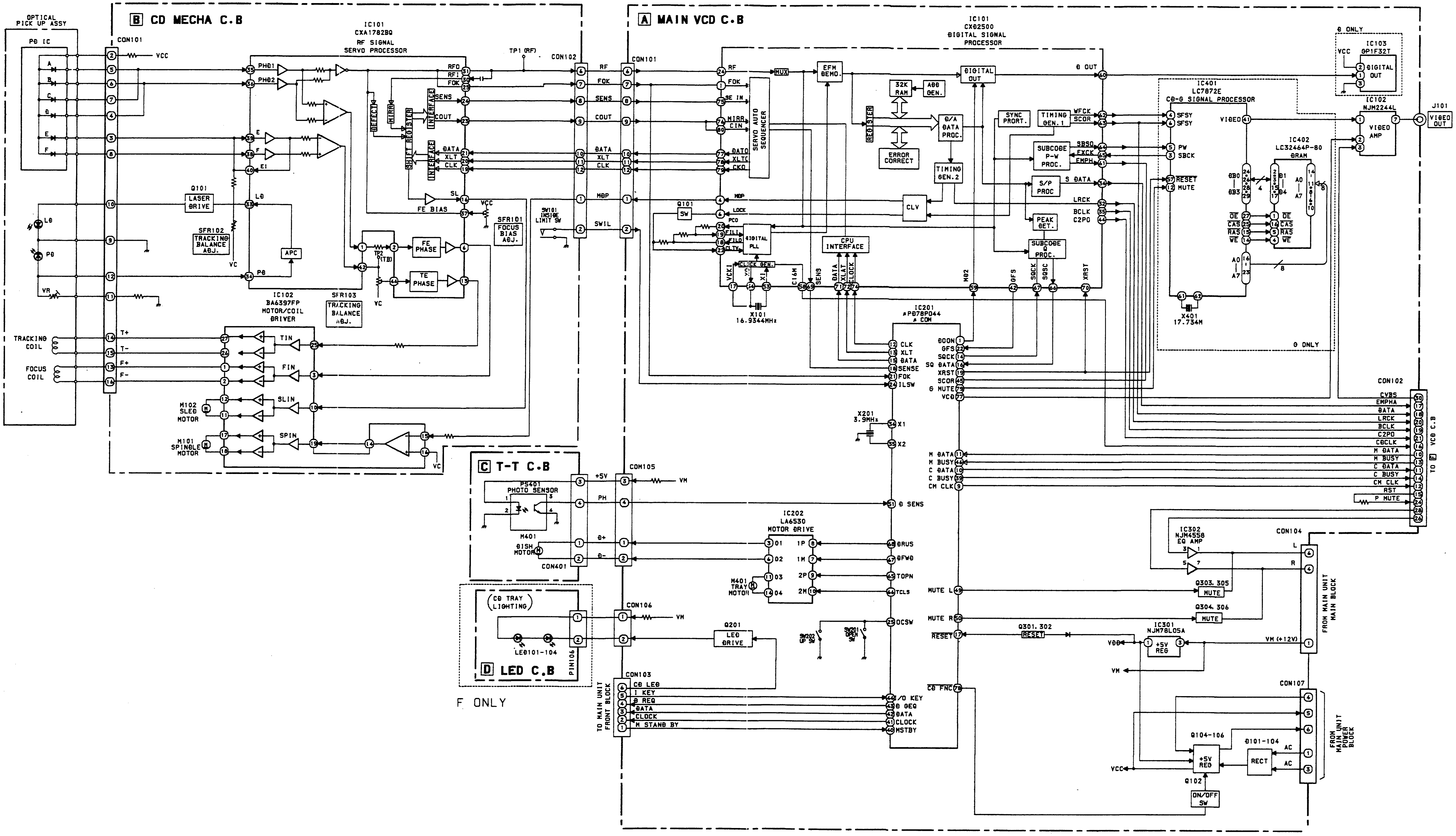

B CD MECHA C.B
A MAIN VCD C.B
OPTICAL PICK UP ASSY
PD IC
CON101
VCC
IC101
CXA1782BQ
RF SIGNAL SERVO PROCESSOR
PHD1
PHD2
RFO
RFI
FOK
SENS
COUT
DATA
XLT
CLK
SL
FE BIAS
DEFECT
MIRR
SHIFT REGISTER
INTERFACE
TP1 (RF)
CON102
Q101
LASER DRIVE
SFR102
TRACKING BALANCE ADJ.
APC
LD
PD
VR
SFR101
FOCUS BIAS ADJ.
SFR103
TRACKING BALANCE ADJ.
TP2 (TE)
FE PHASE
TE PHASE
IC102
BA6397FP
MOTOR/COIL DRIVER
TRACKING COIL
FOCUS COIL
T+
T-
F+
F-
TIN
FIN
SLIN
SPIN
M102 SLED MOTOR
M101 SPINDLE MOTOR
SW101 INSIDE LIMIT SW
MDP
SWIL
TO E VCD C.B
IC101
CXD2500
DIGITAL SIGNAL PROCESSOR
MUX
EFM DEMO.
32K RAM
ADD GEN.
REGISTER
D/A DATA PROC.
ERROR CORRECT
SERVO AUTO SEQUENCER
DIGITAL OUT
D OUT
SYNC PROTECT.
TIMING GEN.1
TIMING GEN.2
SUBCODE P-W PROC.
SUBCODE Q PROC.
S/P PROC
PEAK DET.
CLV
CPU INTERFACE
DIGITAL PLL
CLOCK GEN.
WFCK
SCOR
SBSO
EXCK
EMPH
S DATA
LRCK
BCLK
C2PO
X101
16.9344MHz
IC201
μPD78P044
μ COM
DOON
GFS
SQCK
SQ DATA
XRST
G MUTE
VCD
CLK
XLT
DATA
SENSE
FOK
ILSW
CD ON
Q107, 108
+5V SWITCH
X201
3.9MHz
X1
X2
D SENS
IC401
LC7872E
CD-G SIGNAL PROCESSOR
SFSY
PW
SBCK
RESET
MUTE
VIDEO
DB0
DB3
OE
CAS
RAS
WE
A0
A7
X401
17.734M
D ONLY
IC402
LC32464P-80
DRAM
IC103
DP1F32T
DIGITAL OUT
IC102
NJM2244L
VIDEO AMP
J101
VIDEO OUT
CON4
TO E VCD C.B J4
EXCEPT G
G ONLY
TO E VCD C.B
CON6
EMPHA
DATA
LRCK
BCLK
C2PO
CDCLK
TO E VCD C.B J6
CON2
TO E VCD C.B J2
C T-T C.B
PS401
PHOTO SENSOR
M401
DISH MOTOR
CON401
CON105
+5V
PH
D+
D-
VM
IC202
LA6530
MOTOR DRIVE
M402 TRAY MOTOR
DRUS
DFWD
TOPN
TCLS
OCSW
SW202 UP SW
SW201 OPEN SW
CD TRAY LIGHTING
LED101-104
D LED C.B
PIN106
CON106
Q201
LED DRIVE
F ONLY
CON103
TO MAIN UNIT FRONT BLOCK
CD LED
I KEY
D REQ
DATA
CLOCK
M STAND BY
I/O KEY
D REQ
DATA
CLOCK
MSTBY
CD FNC
CON104
L
R
FROM MAIN UNIT MAIN BLOCK
MUTE L
MUTE R
Q303, 305
MUTE
Q304, 306
Q301, 302
RESET
IC301
NJM78L05A
+5V REG
VDD
VM (+12V)
CON107
FROM MAIN UNIT POWER BLOCK
Q104-106
+5V REG
D101-104
RECT
AC
Q102
ON/OFF SW
VCC
TO E VCD C.B J5
CON5

BLOCK DIAGRAM-2 (V3L: VCD)



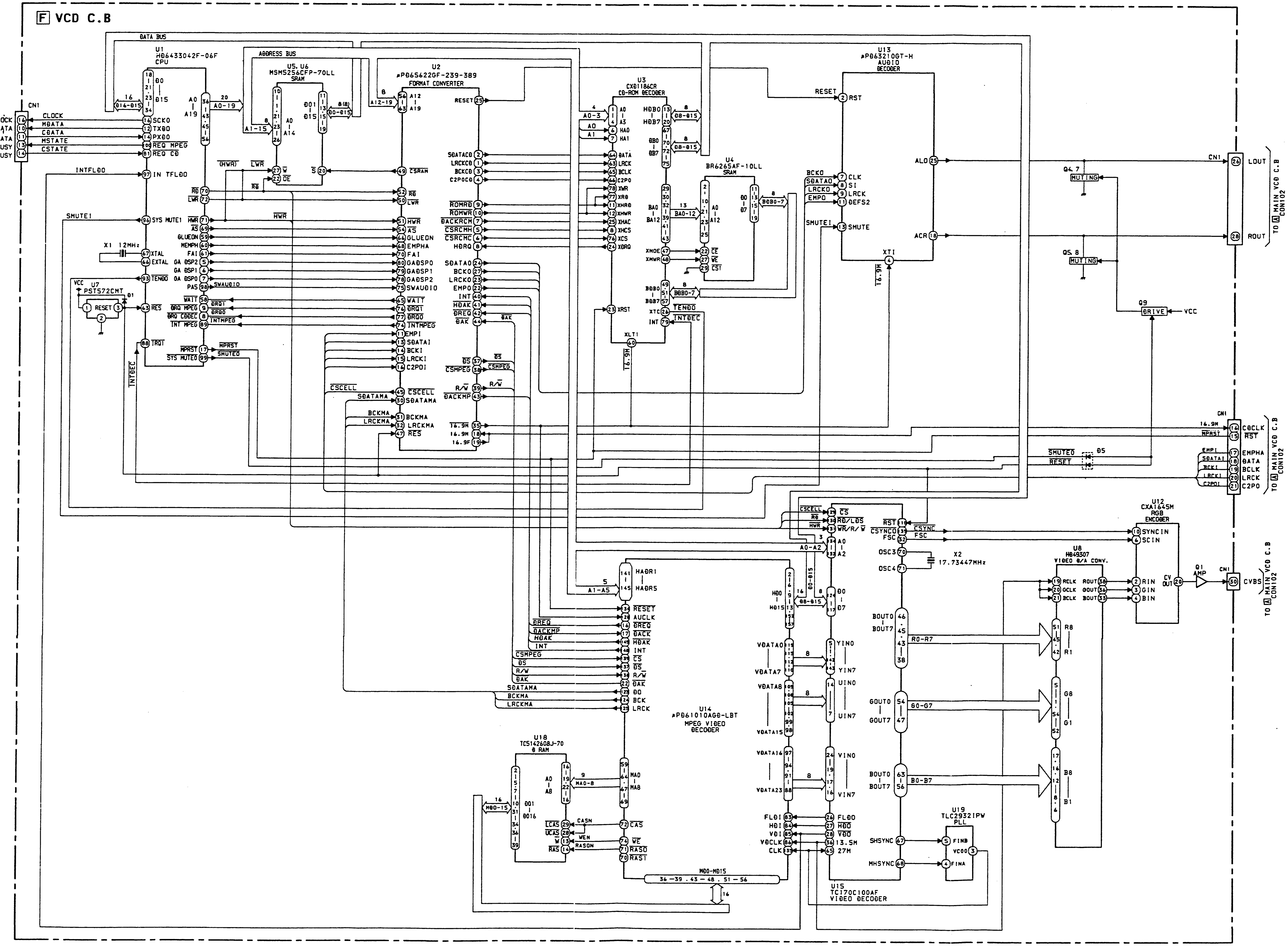
FROM A MSIN VCD C.B CON5
J5
VCC
U3
27512
ROM
A0-A9
A10-A15
D0-D7
CE
3-10·24·26
1·2·21·23·26·27
11-13·15·19
20
U7
4256
DRAM
WH
RAS
A0-A8
D0-D3
CAS
U6
4256
DRAM
U5
4256
DRAM
U4
4256
DRAM
D0-D3
CAS
1·2·18·19
17
D8-D13
D0-D3
D4-D7
D8-D11
D12-D15
A0-A9
A0-A8
D0-D15
X3
4.43MHz
U14
74HC04
SC OSC
53-57·59-63
MA0-MA9
32
MCED
47
51
MWE
RASO
23-28·30·31·34-37·39-42
MD0-MD15
45
44
LCASIN
LCAS
48
50
UCAS
UCASIN
VD0
VD7
VD8
VD15
VD16
VD23
VCLK
VSYNC
U2
CXD1178Q
RGB D/A CONV.
R0-R7
G0-G7
B0-B7
R0
R7
G0
G7
B0
B7
RCK
GCK
BCK
R0
G0
B0
U13
UXD1645M
PAL DECODER
SCI
RI
GI
BI
SYN
CVO
J4
TO A MAIN VCD C.B CON4
FROM A MAIN VCD C.B CON6
J6
LRCK
DATA
BCK
EMPH
C2PO
16.9MHS
CDLRCK
CDDATA
CDBCK
DA-EMP
CDCZPO
DA-XCK
U1
CL480
MPEG DECODER
DALRCK
DADATA
DABCK
DACEMP
RESET
CFLEVE
HA0
HA1
HA2
R/W
DS
DTACT
FMWDET
DA-VCD
HD0-HD7
INT
XTLIN
XTLOUT
X1
40.5MHz
U201
74HC257
MULTIPLEX
A0
A1
A2
A3
Y0
Y1
Y2
Y3
B0
B1
B2
B3
SEL
U9
D6376
AUDIO D/A CONV
LRCK
DATA
BCK
LOURT
ROUT
U12
BA4558
LPF
J2
TO A MAIN VCD C.B CON2
EMPHASIS SW
T201, 202
G SUB C.B
LRCK
DATA
BCK
EMPH
TO
A MAIN VCD C.B
V-CD
PC4
PC7
PB0
PB7
PA0
PA7
IRQ
OSC2
OSC1
X2
4.0MHz
VCC
RST
VCC
PD2
PD3
PD4
PD5
PD6
RA1
U8
68HC705
MICRO CONTROLLER
F VCD C.B

BLOCK DIAGRAM-3 (V4L: MAIN VCD ／ CD MECHA)



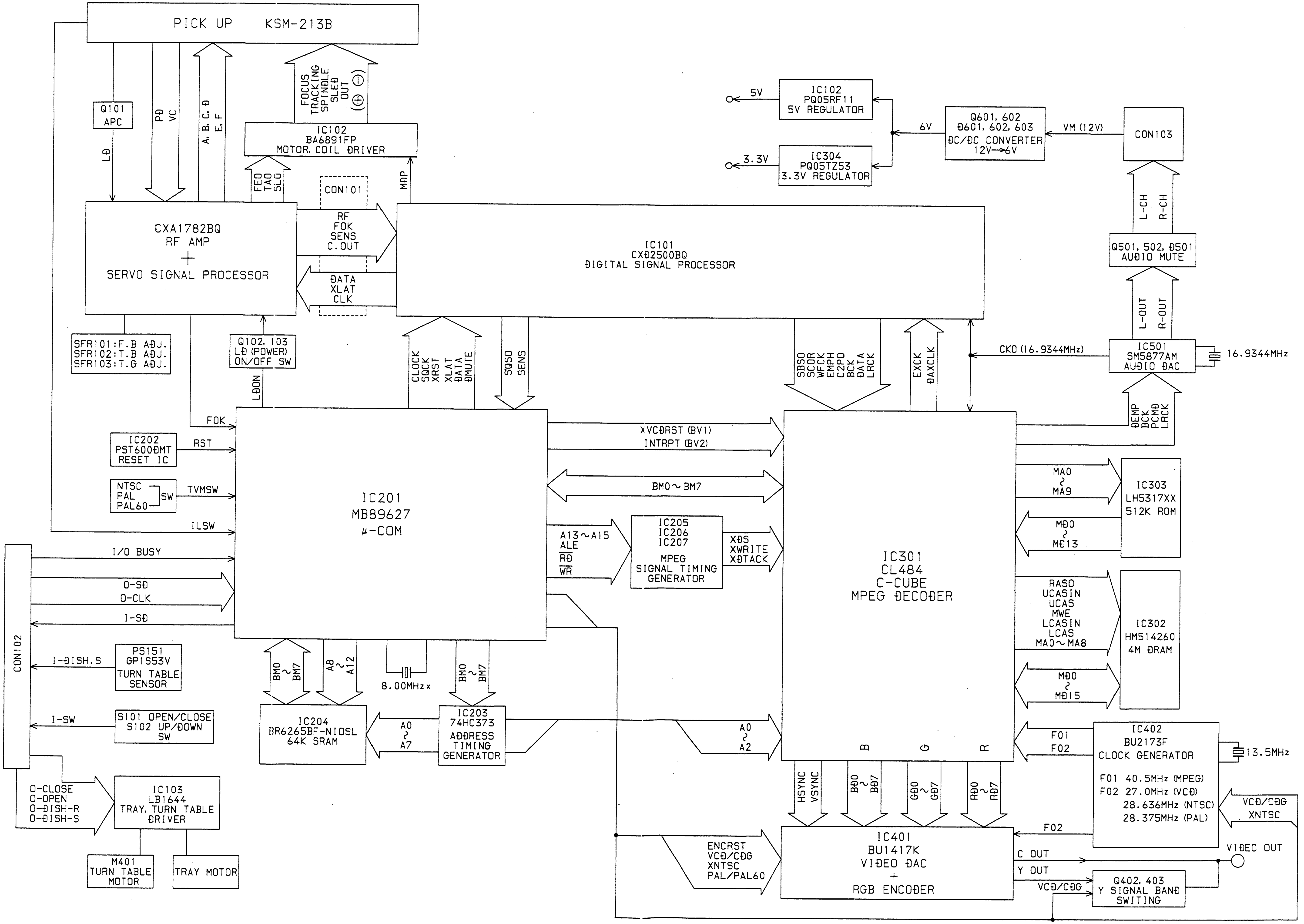
OPTICAL PICK UP ASSY
PD IC
B CD MECHA C.B
CON101
VCC
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
TP1 (RF)
CON102
PHD1
PHD2
RFO
RFI
FOK
SENS
COUT
DATA
XLT
CLK
SL
FE BIAS
DEFECT
MIRR
INTERFACE
SHIFT REGISTER
Q101 LASER DRIVE
SFR102 TRACKING BALANCE ADJ.
APC
SFR101 FOCUS BIAS ADJ.
FE PHASE
TE PHASE
TP2 (TE)
IC102 BA6397FP MOTOR/COIL DRIVER
SFR103 TRACKING BALANCE ADJ.
TRACKING COIL
FOCUS COIL
T+
T-
F+
F-
TIN
FIN
SLIN
SPIN
M102 SLED MOTOR
M101 SPINDLE MOTOR
SW101 INSIDE LIMIT SW
MDP
SWIL
LD
PD
VR
VC
A MAIN VCD C.B
CON101
IC101 CXD2500 DIGITAL SIGNAL PROCESSOR
MUX
EFM DEMO.
32K RAM
ADD GEN.
REGISTER
ERROR CORRECT
D/A DATA PROC.
TIMING GEN.2
DIGITAL OUT
D OUT
SYNC PROTECT.
TIMING GEN.1
SUBCODE P-W PROC.
S/P PROC
PEAK DET.
SUBCODE Q PROC.
CLV
CPU INTERFACE
SERVO AUTO SEQUENCER
DIGITAL PLL
CLOCK GEN.
Q101 SW
X101 16.9344MHz
IC201 μPD78P044 μ COM
X201 3.9MHz
IC401 LC7872E CD-G SIGNAL PROCESSOR
IC402 LC32464P-80 DRAM
X401 17.734M
IC103 GP1F32T DIGITAL OUT
D ONLY
IC102 NJM2244L VIDEO AMP
J101 VIDEO OUT
CON102
TO E VCD C.B
CVBS
EMPHA
DATA
LRCK
BCLK
C2PO
CDCLK
M DATA
M BUSY
C DATA
C BUSY
CM CLK
RST
P MUTE
C T-T C.B
PS401 PHOTO SENSOR
M401 DISH MOTOR
CON401
CON105
IC202 LA6530 MOTOR DRIVE
M401 TRAY MOTOR
SW202 UP SW
SW201 OPEN SW
D LED C.B
CD TRAY LIGHTING
LED101-104
PIN106
CON106
Q201 LED DRIVE
F ONLY
CON103
TO MAIN UNIT FRONT BLOCK
CD LED
I KEY
D REQ
DATA
CLOCK
M STAND BY
IC302 NJM4558 EQ AMP
Q303, 305 MUTE
Q304, 306 MUTE
Q301, 302 RESET
IC301 NJM78L05A +5V REG
CON104
FROM MAIN UNIT MAIN BLOCK
VM (+12V)
CON107
FROM MAIN UNIT POWER BLOCK
Q104-106 +5V REG
D101-104 RECT
Q102 ON/OFF SW
AC
VCC
VM

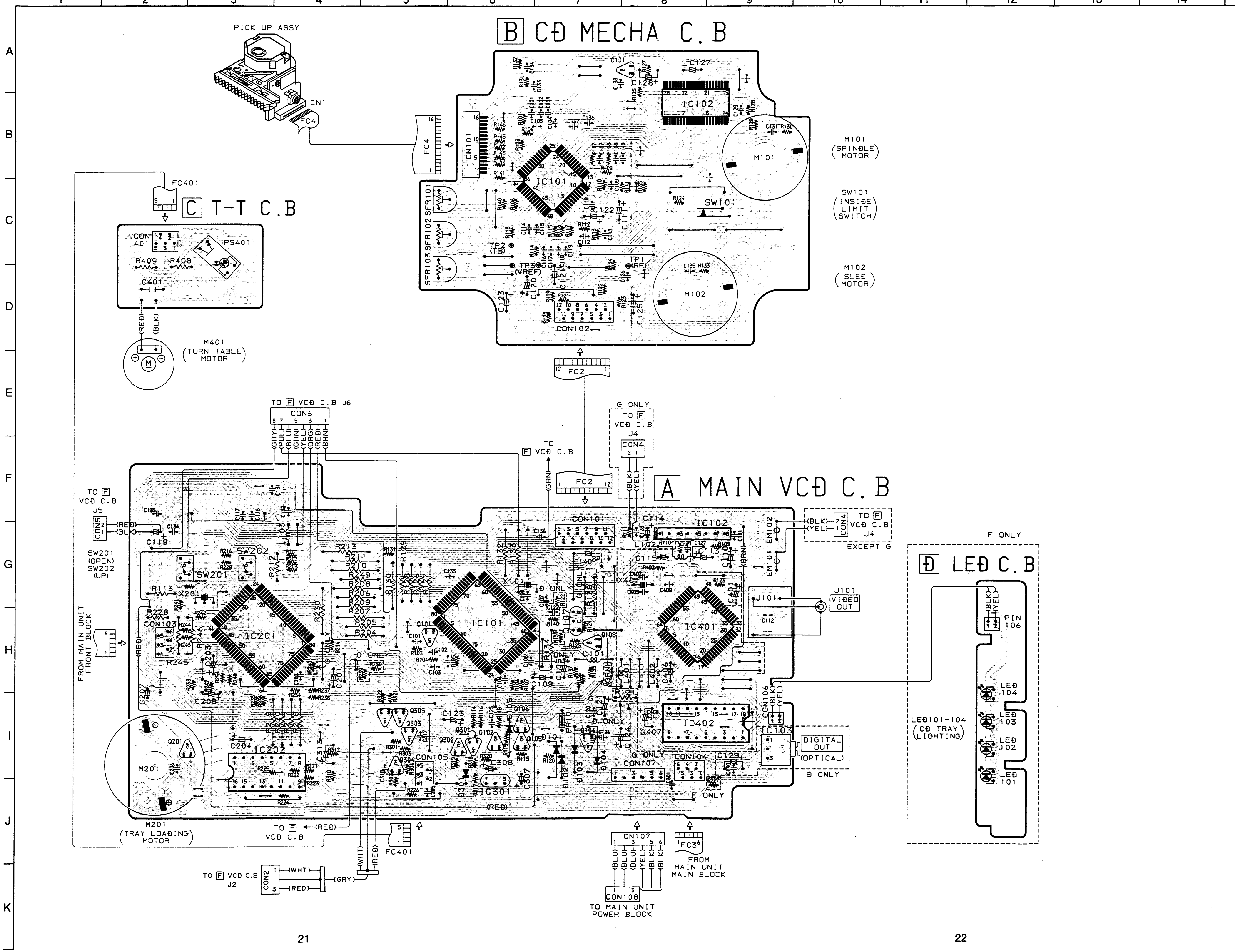
BLOCK DIAGRAM-4 (V4L: VCD)



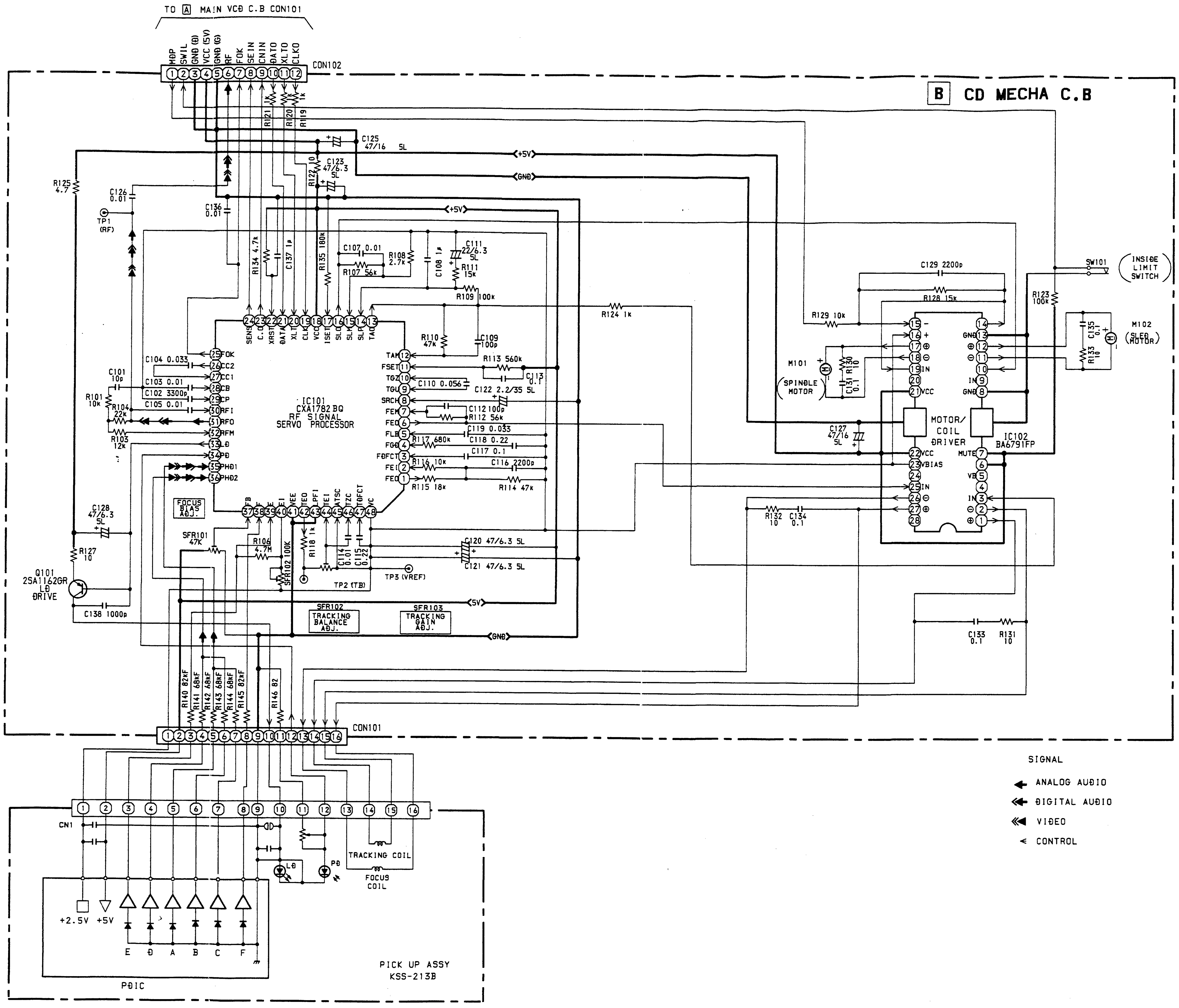
F VCD C.B
DATA BUS
ADDRESS BUS
U1
HD6433042F-06F
CPU
U5, U6
MSM5256CFP-70LL
SRAM
U2
μPD65622GF-239-389
FORMAT CONVERTER
U3
CXD1186CR
CD-ROM DECODER
U4
BR6265AF-10LL
SRAM
U13
μPD63210GT-H
AUDIO DECODER
U7
PST572CMT
X1 12MHz
CN1
CLOCK
MDATA
CDATA
MSTATE
CSTATE
CBUSY
TO/FROM A MAIN VCD C.B CON102
INTFLDO
SMUTE1
SYS MUTE1
IN TFLDO
SCKO
TXDO
PXDO
REQ MPEG
REQ CD
XTAL
EXTAL
RES
RESET
TENDO
TRQT
INTDEC
HPRST
SYS MUTEO
RD
LWR
HWR
AS
GLUEON
MEMPH
FAI
GA DSP2
GA DSP1
GA DSP0
PAS
SWAUDIO
WAIT
DRQ MPEG
DRQ CODEC
INT MPEG
DRQ1
DRQ0
INTMPEG
EMPHA
GADSP0
GADSP1
GADSP2
EMP1
SDATA1
BCK1
LRCK1
C2PO1
CSCELL
SDATAMA
BCKMA
LRCKMA
RES
SDATACO
LRCKCO
BCKCO
C2POCO
ROMRD
ROMWR
DACKRCH
CSRCMH
CSRCMC
HDRQ
SDATAO
BCKO
LRCKO
EMPO
INT
HDAK
DREQ
DAK
DS
CSMPEG
R/W
DACKMP
16.9M
16.9F
A0-19
A12-19
A1-15
D0-D15
D14-D15
A0-A14
D0-D7
A0-3
HDB0-HDB7
DB0-DB7
BA0-BA12
BD0-BD7
XMOE
XMWR
XRST
XTC
XLT1
CE
WE
CS1
RST
CLK
SI
LRCK
DEFS2
SMUTE
ALO
ACR
XTI
16.9M
Q4, 7 MUTING
Q5, 8 MUTING
Q9 DRIVE
VCC
LOUT
ROUT
TO A MAIN VCD C.B CON102
CDCLK
RST
EMPHA
DATA
BCLK
LRCK
C2PO
SMUTEO
RESET
D5
U12
CXA1645M
RGB ENCODER
SYNCIN
SCIN
RIN
GIN
BIN
CV OUT
Q1 AMP
CVBS
U8
HB49307
VIDEO D/A CONV.
RCLK
GCLK
BCLK
ROUT
GOUT
BOUT
U14
μPD61010AGD-LBT
MPEG VIDEO DECODER
HADR1-HADR5
A1-A5
RESET
AUCLK
DREQ
DACK
HDAK
INT
CS
DS
R/W
DAK
DD
BCK
LRCK
HD0-HD15
D8-D15
VDATA0-VDATA23
MA0-MA8
CAS
WE
RAS0
RAS1
MD0-MD15
36-39 . 43-48 . 51-56
U18
TC5142608J-70
D RAM
A0-A8
DD1-DD16
MD0-15
LCAS
UCAS
W
RAS
CASN
WEN
RASON
CS
RD/LDS
WR/R/W
CSYNCO
FSC
CSYNC
A0-A2
D0-D7
OSC3
OSC4
X2 17.73447MHz
YIN0-YIN7
UIN0-UIN7
VIN0-VIN7
FLD1
HD1
VD1
VDCLK
CLK
FLDO
HDO
VDO
13.5M
27M
BOUT0-BOUT7
GOUT0-GOUT7
R0-R7
G0-G7
B0-B7
R8-R1
G8-G1
B8-B1
SHSYNC
MHSYNC
U19
TLC2932IPW
PLL
FINB
VCOO
FINA
U15
TC170C100AF
VIDEO DECODER

BLOCK DIAGRAM-5 (V5)

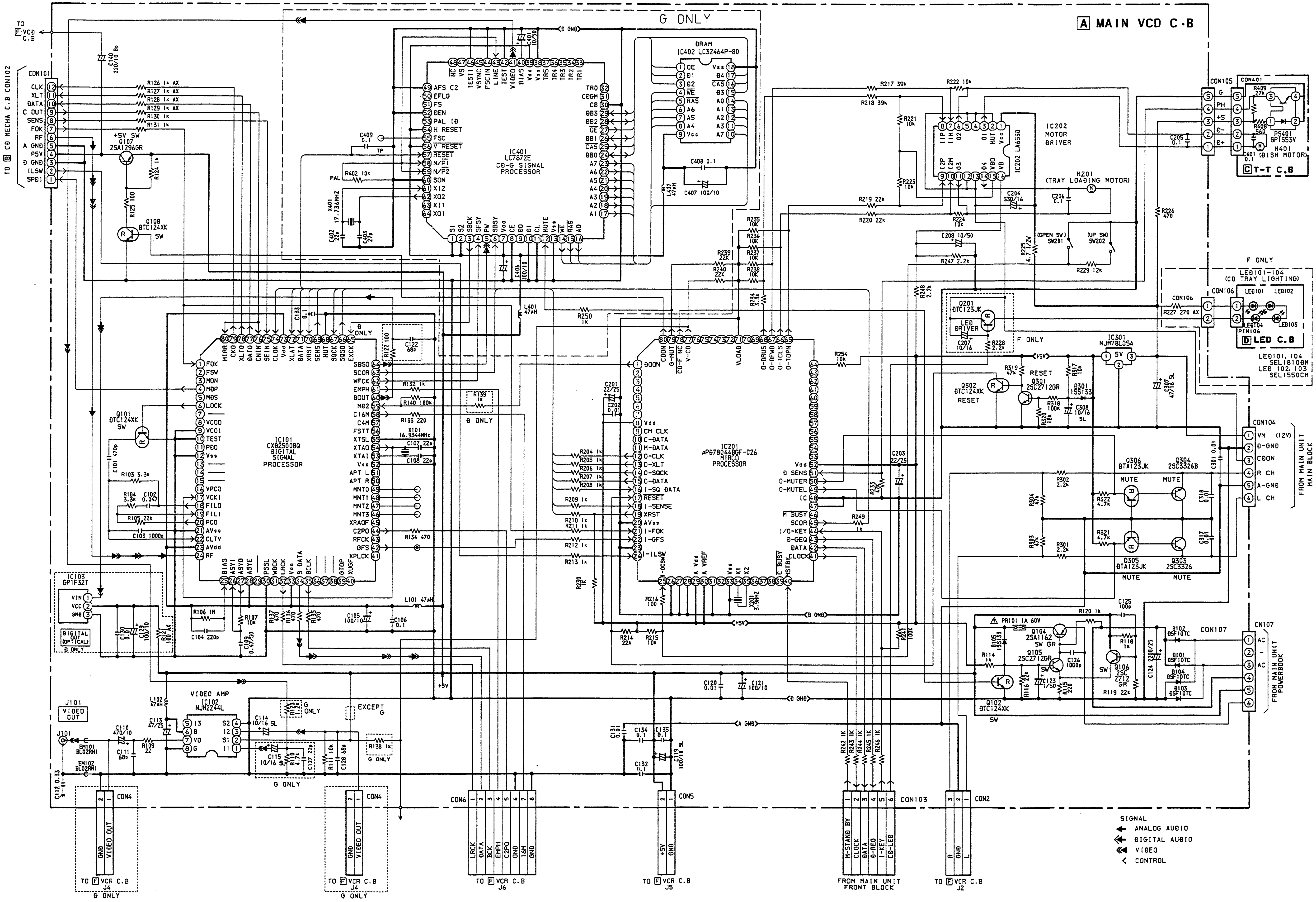

PICK UP KSM-213B
Q101 APC
LD
PD
VC
A, B, C, D
E, F
FOCUS
TRACKING
SPINDLE
SLED
OUT
(⊕ ⊖)
IC102 BA6891FP MOTOR, COIL DRIVER
FEO
TAO
SLO
CON101
MDP
CXA1782BQ RF AMP + SERVO SIGNAL PROCESSOR
RF
FOK
SENS
C.OUT
DATA
XLAT
CLK
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
SFR101:F.B ADJ.
SFR102:T.B ADJ.
SFR103:T.G ADJ.
Q102, 103 LD (POWER) ON/OFF SW
LDON
CLOCK
SQCK
XRST
XLAT
DATA
DMUTE
SQSO
SENS
SBSO
SCOR
WFCK
EMPH
C2PO
BCK
DATA
LRCK
EXCK
DAXCLK
CKO (16.9344MHz)
IC501 SM5877AM AUDIO DAC
16.9344MHz
DEMP
BCK
PCMD
LRCK
L-OUT
R-OUT
Q501, 502, D501 AUDIO MUTE
L-CH
R-CH
CON103
VM (12V)
Q601, 602 D601, 602, 603 DC/DC CONVERTER 12V→6V
6V
IC102 PQ05RF11 5V REGULATOR
5V
IC304 PQ05TZ53 3.3V REGULATOR
3.3V
FOK
IC202 PST600DMT RESET IC
RST
NTSC
PAL
PAL60
SW
TVMSW
ILSW
IC201 MB89627 μ-COM
XVCDRST (BV1)
INTRPT (BV2)
BM0～BM7
A13～A15
ALE
RD
WR
IC205
IC206
IC207
MPEG SIGNAL TIMING GENERATOR
XDS
XWRITE
XDTACK
IC301 CL484 C-CUBE MPEG DECODER
MA0 ～ MA9
IC303 LH5317XX 512K ROM
MD0 ～ MD13
RASO
UCASIN
UCAS
MWE
LCASIN
LCAS
MA0～MA8
IC302 HM514260 4M DRAM
MD0 ～ MD15
CON102
I/O BUSY
O-SD
O-CLK
I-SD
I-DISH.S
PS151 GP1S53V TURN TABLE SENSOR
I-SW
S101 OPEN/CLOSE
S102 UP/DOWN
SW
BM0 ～ BM7
A8 ～ A12
8.00MHz x
BM0 ～ BM7
IC204 BR6265BF-NIOSL 64K SRAM
A0 ～ A7
IC203 74HC373 ADDRESS TIMING GENERATOR
A0 ～ A2
B
G
R
F01
F02
IC402 BU2173F CLOCK GENERATOR
13.5MHz
F01 40.5MHz (MPEG)
F02 27.0MHz (VCD)
28.636MHz (NTSC)
28.375MHz (PAL)
VCD/CDG
XNTSC
O-CLOSE
O-OPEN
O-DISH-R
O-DISH-S
IC103 LB1644 TRAY, TURN TABLE DRIVER
M401 TURN TABLE MOTOR
TRAY MOTOR
HSYNC
VSYNC
BD0 ～ BD7
GD0 ～ GD7
RD0 ～ RD7
F02
ENCRST
VCD/CDG
XNTSC
PAL/PAL60
IC401 BU1417K VIDEO DAC + RGB ENCODER
C OUT
Y OUT
VCD/CDG
VIDEO OUT
Q402, 403 Y SIGNAL BAND SWITING


B CD MECHA C.B
C T-T C.B
A MAIN VCD C.B
D LED C.B
F ONLY
PICK UP ASSY
CN1
FC4
CN101
IC101
IC102
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
SFR101
SFR102
SFR103
TP2 (TE)
TP3 (VREF)
TP1 (RF)
CON102
FC2
FC401
CON401
PS401
R409
R408
C401
M401 (TURN TABLE MOTOR)
(RED)
(BLK)
TO F VCD C.B J6
CON6
(GRY) (PUL) (BLU) (GRN) (YEL) (ORG) (RED) (BRN)
TO F VCD C.B
(GRN)
G ONLY
TO F VCD C.B J4
CON4
(BLK) (YEL)
TO F VCD C.B J5
CON5
SW201 (OPEN)
SW202 (UP)
FROM MAIN UNIT FRONT BLOCK
IC201
IC202
IC401
IC402
CON101
CON103
CON104
CON105
CON106
CON107
IC103
IC301
IC407
J101 VIDEO OUT
DIGITAL OUT (OPTICAL)
D ONLY
EXCEPT G
TO F VCD C.B J4
EM101
EM102
PIN 106
LED 104
LED 103
LED 102
LED 101
LED101-104 (CD TRAY LIGHTING)
M201
M201 (TRAY LOADING MOTOR)
TO F VCD C.B
(RED)
FC401
TO F VCD C.B J2
CON2
(WHT)
(RED)
(GRY)
CN107
(BLU) (BLU) (BLU) (YEL) (BLK) (BLK)
FC3
FROM MAIN UNIT MAIN BLOCK
CON108
TO MAIN UNIT POWER BLOCK
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K

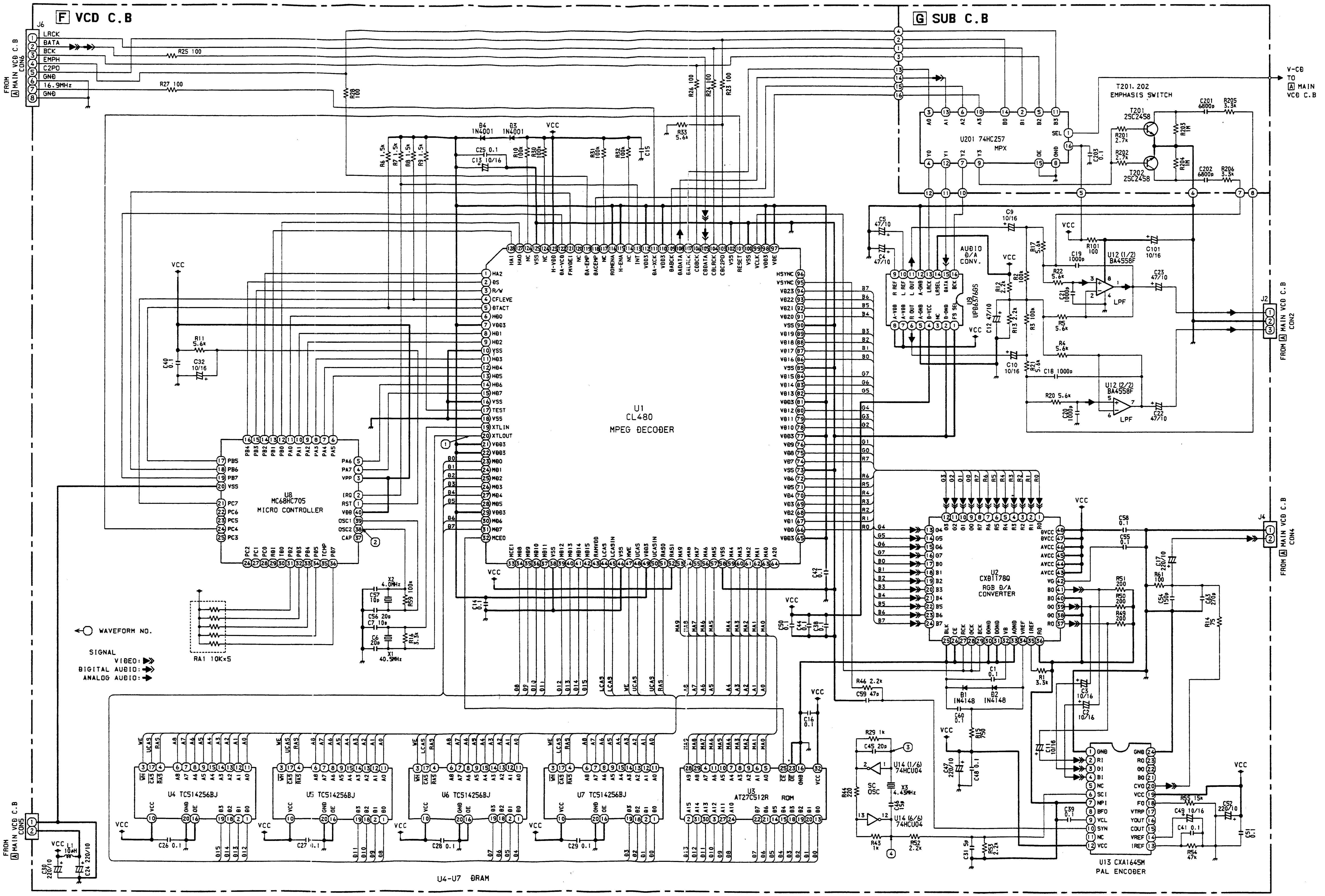
CHEMATIC DIAGRAM-1 (V3L: CD MECHA)


TO A MAIN VCD C.B CON101
MDP SWIL GND (D) VCC (5V) GND (G) RF FOK SEIN CNIN DATO XLTO CLKO
CON102
B CD MECHA C.B
R121 R120 R119 1k
C125 47/16 5L
C123 47/6.3 5L
R122 10
<+5V>
<GND>
R125 4.7
C126 0.01
TP1 (RF)
C136 0.01
R134 4.7k
C137 1µ
R135 180k
C107 0.01
R108 2.7k
R107 56k
C108 1µ
C111 22/6.3 5L
R111 15k
R109 100k
R124 1k
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
SENS C.OUT XRST DATA XLT CLK VCC ISET SLO SL- SLP TAO
FOK CC2 CC1 CB CP RFI RFO RFM LD PD PHD1 PHD2
TAM FSET TGZ TGU SRCH FEM FEO FLB FGD FDFCT FEI FEO
FB EI VEE TEO LPFI TEI ATSC TZC TDFCT VC
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.056
C122 2.2/35 5L
C112 100p
R112 56k
C119 0.033
R117 680k
C118 0.22
C117 0.1
R116 10k
C116 2200p
R115 18k
R114 47k
C104 0.033
C103 0.01
C102 3300p
C105 0.01
C101 10p
R101 10k
R104 22k
R103 12k
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
FOCUS BIAS ADJ.
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.22
TP2 (TB)
TP3 (VREF)
C120 47/6.3 5L
C121 47/6.3 5L
<5V>
<GND>
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
R140 82kF R141 68kF R142 68kF R143 68kF R144 68kF R145 82kF
R146 82
CON101
C129 2200p
R128 15k
R129 10k
R123 100k
SW101
INSIDE LIMIT SWITCH
M101 SPINDLE MOTOR
R130 1
C131 0.1
M102 SLED MOTOR
C135 0.1
R133 10
C127 47/16 5L
MOTOR/COIL DRIVER
IC102 BA6791FP
VCC VBIAS IN GND MUTE VB
R132 10 C134 0.1
C133 0.1 R131 10
CN1
LD PD
TRACKING COIL
FOCUS COIL
+2.5V +5V
E D A B C F
PDIC
PICK UP ASSY KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

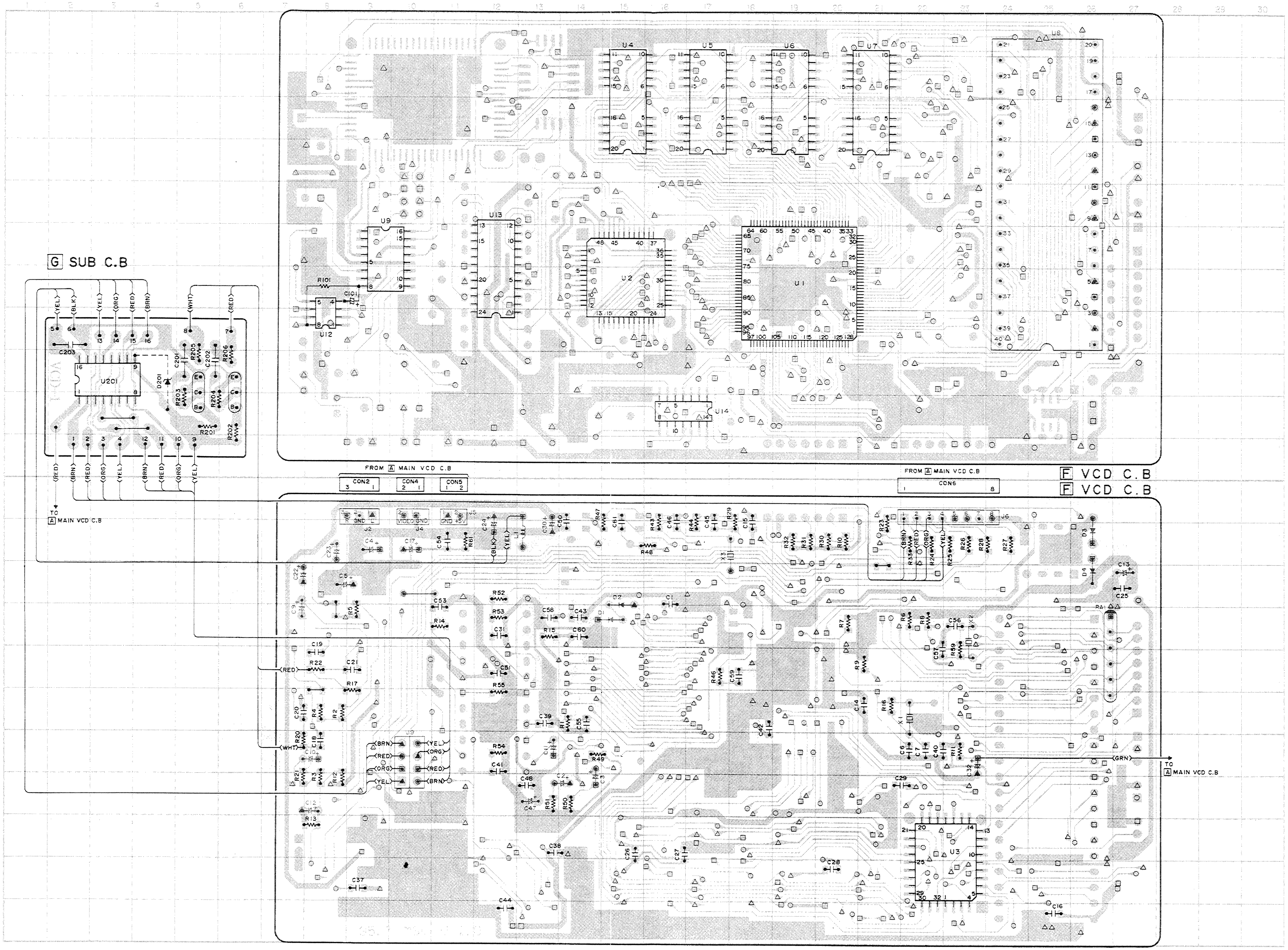
SCHEMATIC DIAGRAM-2 (V3L: MAIN VCD)

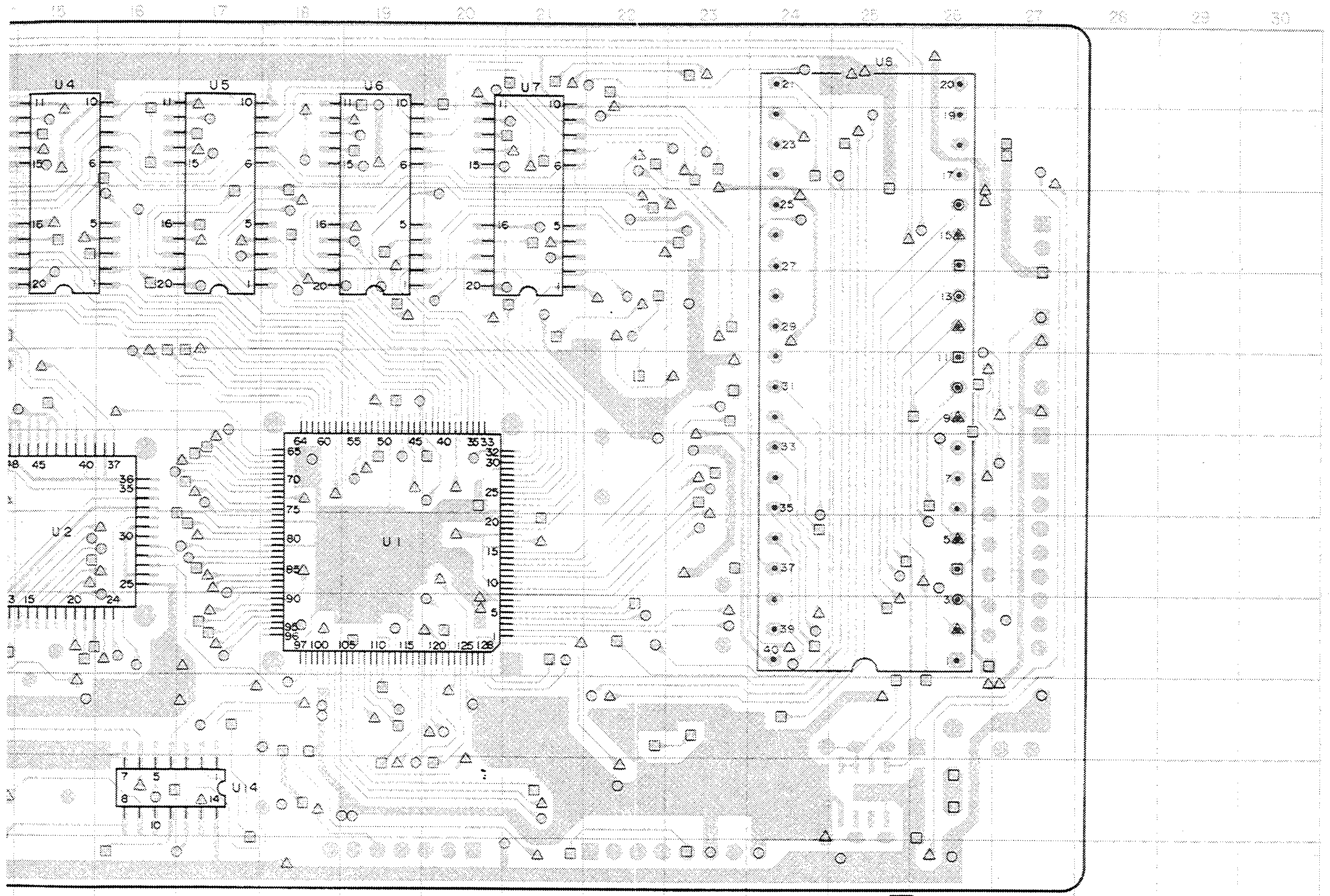

A MAIN VCD C·B
G ONLY
TO F VCB C.B
TO B CD MECHA C.B CON102
CON101
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
Q107 2SA1296GR +5V SW
Q108 DTC124XK SW
IC401 LC7872E CD-G SIGNAL PROCESSOR
X401 17.734MHz
DRAM IC402 LC32464P-80
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
Q101 DTC124XK SW
IC103 GP1F32T
DIGITAL OUT (OPTICAL)
D ONLY
IC201 µPD78044BGF-026 MIRCO PROCESSOR
X201 3.58MHz
IC202 LA6530 MOTOR DRIVER
M201 (TRAY LOADING MOTOR)
(OPEN SW) SW201
(UP SW) SW202
CON105
CON401
M401 (DISH MOTOR)
PS401 GP1S53V
C T-T C.B
F ONLY
LED101-104 (CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104 SEL1810DM
LED 102, 103 SEL1550CM
Q201 DTC123JK LED DRIVER
IC301 NJM78L05A 5V
Q302 DTC124XK RESET
Q301 2SC2712GR
D301 1SS133
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT MAIN BLOCK
Q306 DTA123JK MUTE
Q304 2SC3326B MUTE
Q305 DTA123JK MUTE
Q303 2SC3326 MUTE
PR101 1A 60V
Q104 2SA1162 SW GR
Q105 2SC2712GR SW
Q106 2SC2712 GR SW
Q102 DTC124XK SW
D102 DSF10TC
D101 DSF10TC
D104 DSF10TC
D103 DSF10TC
CON107
CN107
AC
AC
FROM MAIN UNIT POWERBOOK
VIDEO AMP IC102 NJM2244L
J101 VIDEO OUT
EXCEPT G
G ONLY
CON4
GND
VIDEO OUT
TO F VCR C.B J4
G ONLY
CON6
LRCK
DATA
BCK
EMPH
GND
16M
GND
TO F VCR C.B J6
CON5
+5V
GND
TO F VCR C.B J5
CON103
M-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT FRONT BLOCK
CON2
R
GND
L
TO F VCR C.B J2
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

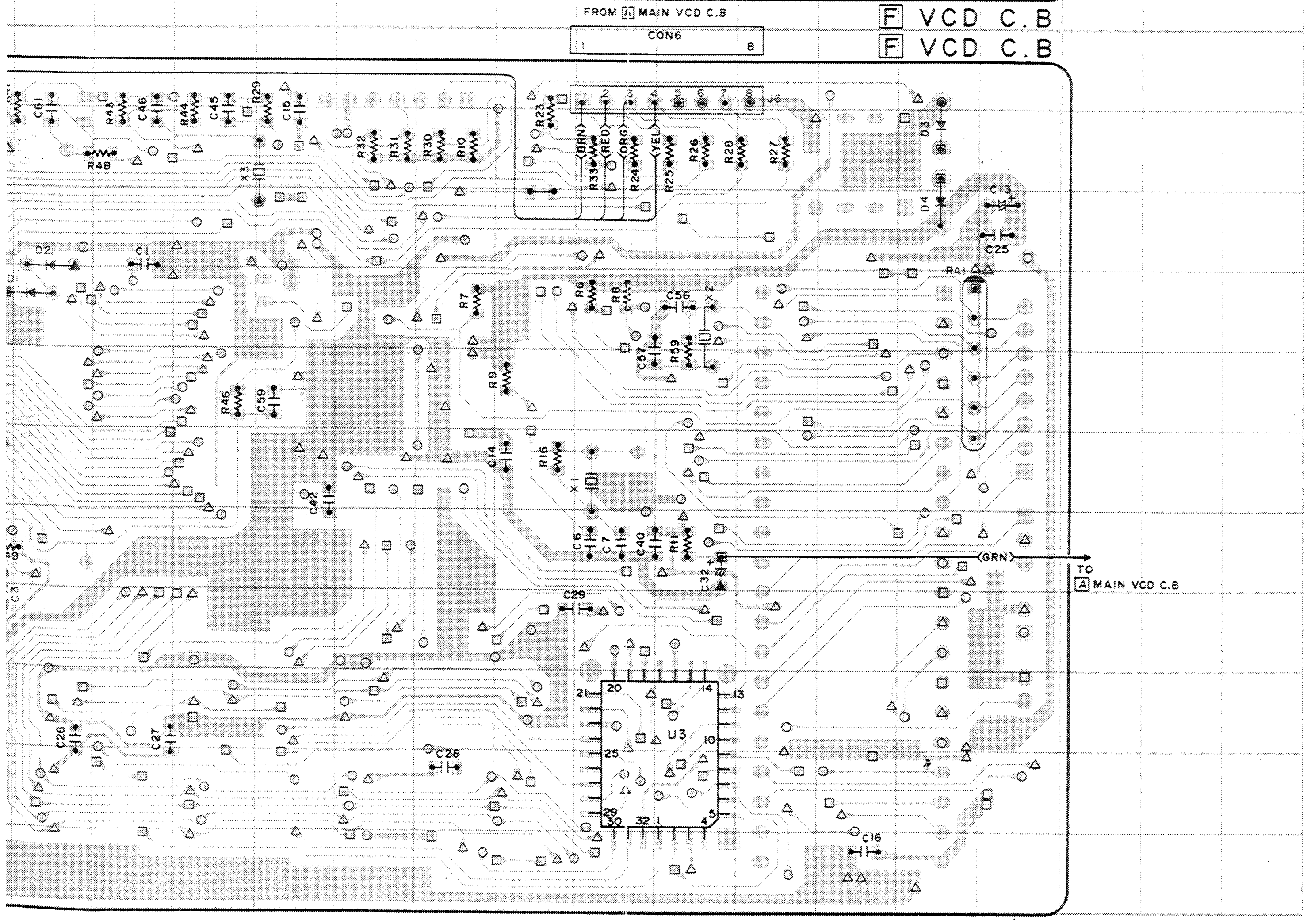
SCHEMATIC DIAGRAM-3 (V3L: VCD)


F VCD C.B
G SUB C.B
FROM A MAIN VCD C.B CON6
J6
LRCK
DATA
BCK
EMPH
C2PO
GND
16.9MHz
GND
R25 100
R27 100
V-CD TO A MAIN VCD C.B
T201, 202 EMPHASIS SWITCH
T201 2SC2458
T202 2SC2458
U201 74HC257 MPX
U1 CL480 MPEG DECODER
U8 MC68HC705 MICRO CONTROLLER
AUDIO D/A CONV.
U9 UPD6376GS
U12 (1/2) BA4558F
U12 (2/2) BA4558F
LPF
J2
FROM A MAIN VCD C.B CON2
J4
FROM A MAIN VCD C.B CON4
U2 CXD1178Q RGB D/A CONVERTER
U13 CXA1645M PAL ENCODER
U14 (1/6) 74HCU04
U14 (6/6) 74HCU04
SC OSC
X3 4.43MHz
X1 40.5MHz
X2 4.0MHz
RA1 10K×5
WAVEFORM NO.
SIGNAL
VIDEO
DIGITAL AUDIO
ANALOG AUDIO
U4 TC514256BJ
U5 TC514256BJ
U6 TC514256BJ
U7 TC514256BJ
U3 AT27C512R ROM
U4-U7 DRAM
FROM A MAIN VCD C.B CON5
VCC

WIRING-2 (V3L: VCD)

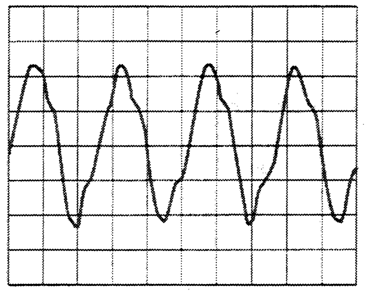

G SUB C.B
U201
D201
C201
C202
C203
R201
R202
R203
R204
R205
R206
(YEL)
(BLK)
(ORG)
(RED)
(BRN)
(WHT)
TO
A MAIN VCD C.B
FROM A MAIN VCD C.B
CON2
CON4
CON5
CON6
F VCD C.B
F VCD C.B
U1
U2
U3
U4
U5
U6
U7
U8
U9
U12
U13
U14
R101
C101
J2
J4
J6
GND
VIDEO GND
GND +5V
X1
X2
X3
(GRN)
TO
A MAIN VCD C.B


U4
U5
U6
U7
U8
U1
U2
U14

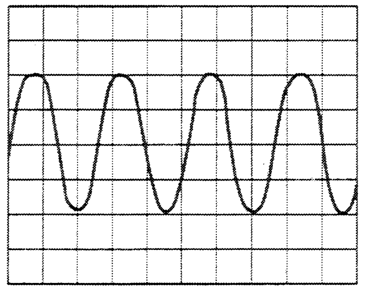

FROM A MAIN VCD C.B
CON6
F VCD C.B
F VCD C.B
TO A MAIN VCD C.B
(GRN)
(GRN)
(RED)
(ORG)
(YEL)
U3
X1
X2
X3
C13
C25
C16
C29
C26
C27
C28
C42
C59
R46
C61
R48

WAVE FORM

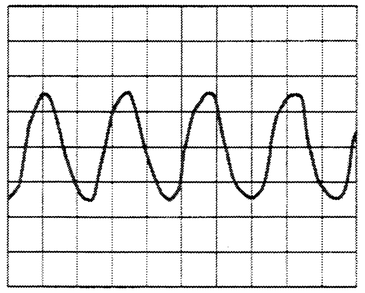
① U1 Pin ⑳ (XLT OUT) VOLT/DIV: 1V
TIME/DIV: 10nS



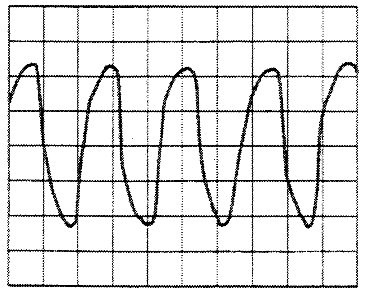
② U8 Pin ㊳ (OSC2) VOLT/DIV: 1V
TIME/DIV: 100nS



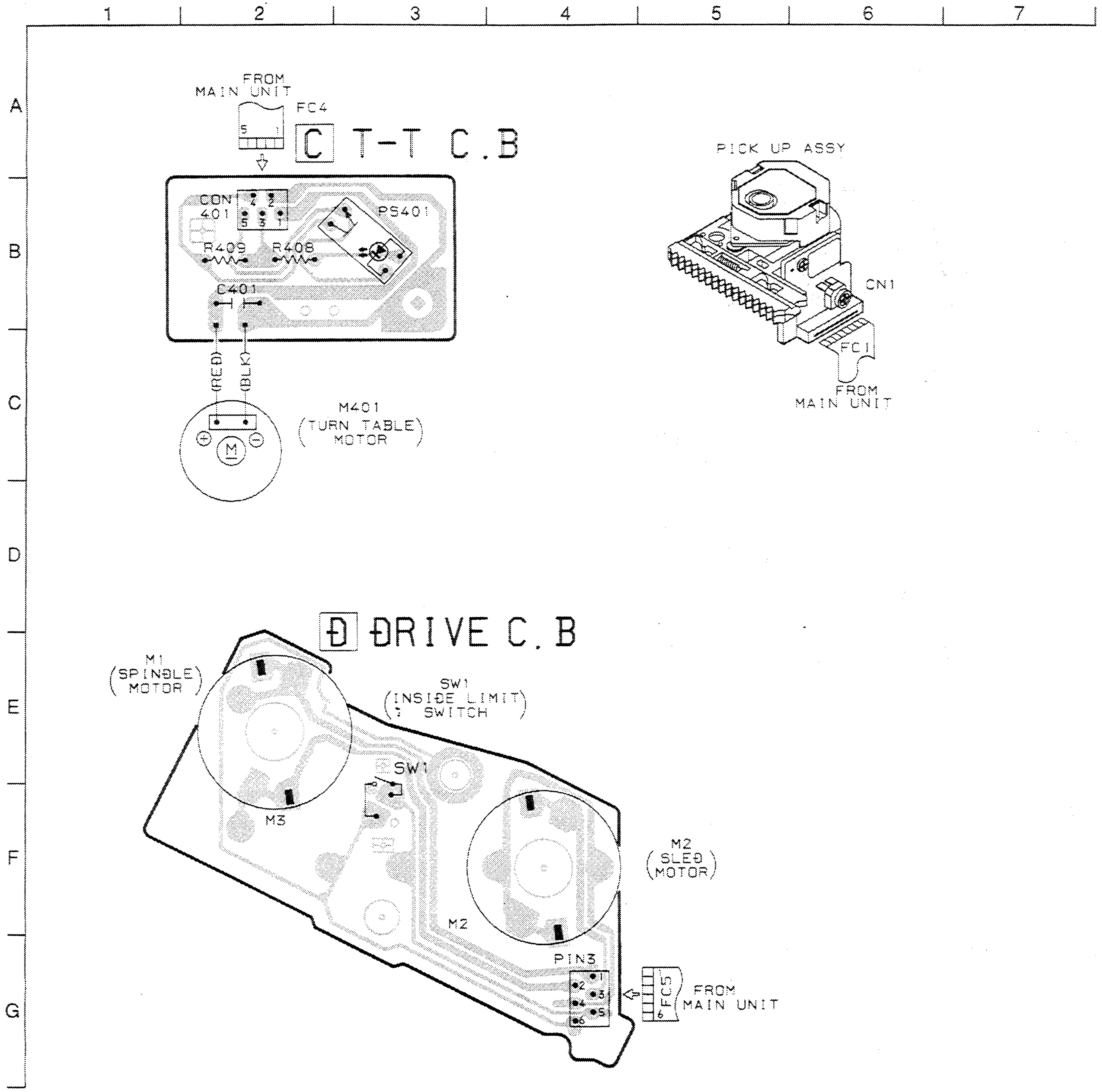
③ U14 Pin ① VOLT/DIV: 1V
TIME/DIV: 100nS



④ U14 Pin ⑫ VOLT/DIV: 1V
TIME/DIV: 100nS

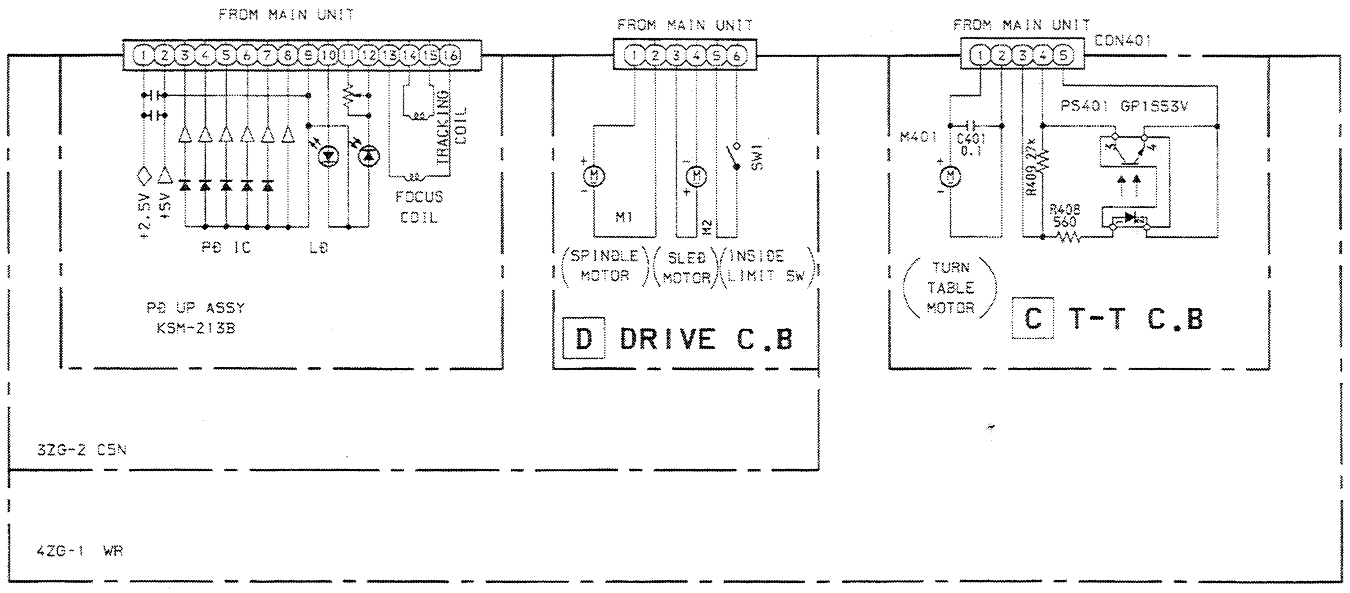


WIRING-3 (WR)



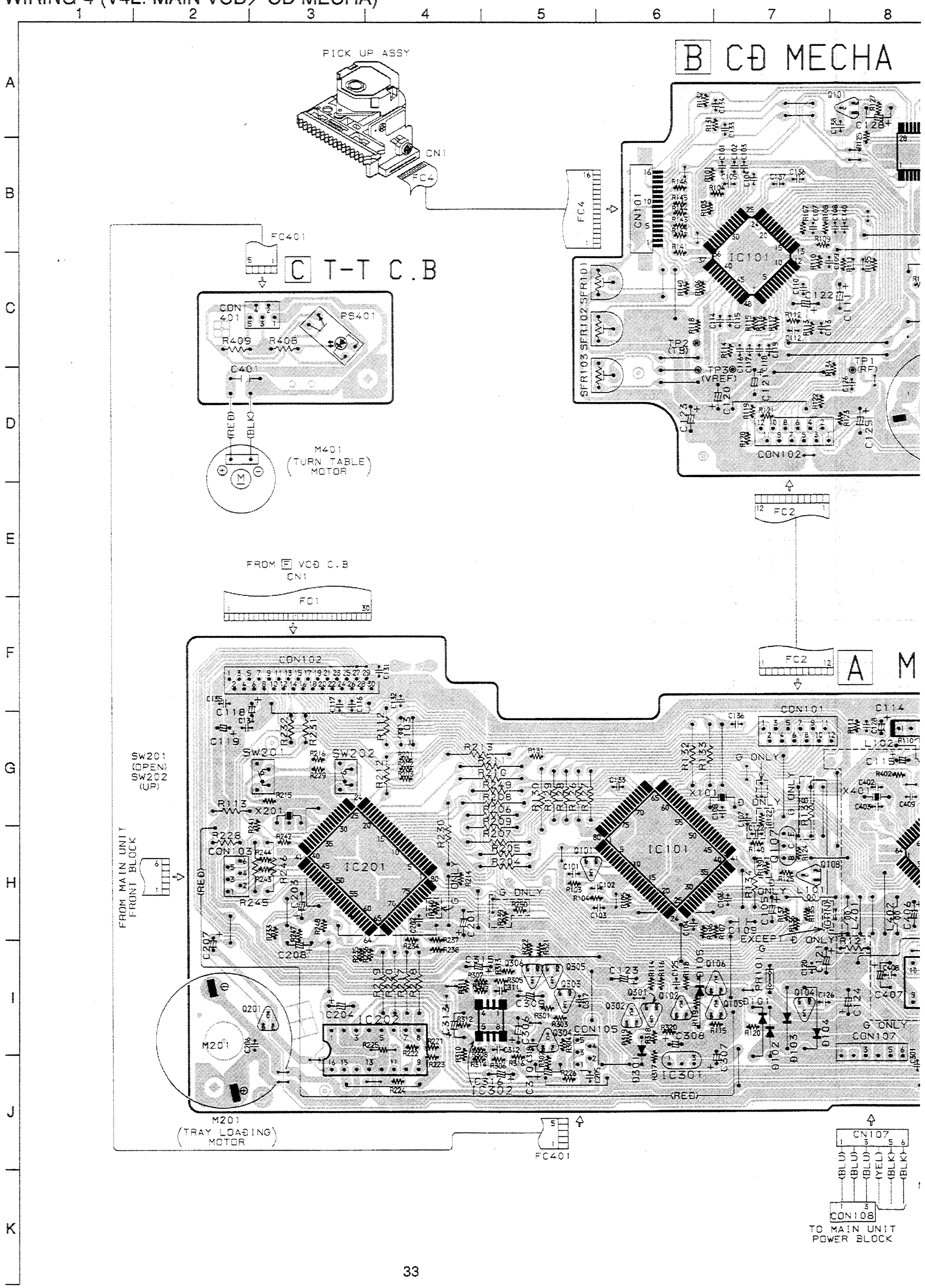
1
2
3
4
5
6
7
A
B
C
D
E
F
G
FROM MAIN UNIT
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
D DRIVE C.B
M1 (SPINDLE MOTOR)
SW1 (INSIDE LIMIT SWITCH)
SW1
M3
M2 (SLED MOTOR)
M2
PIN3
FC5
FROM MAIN UNIT

SCHEMATIC DIAGRAM-4 (WR)



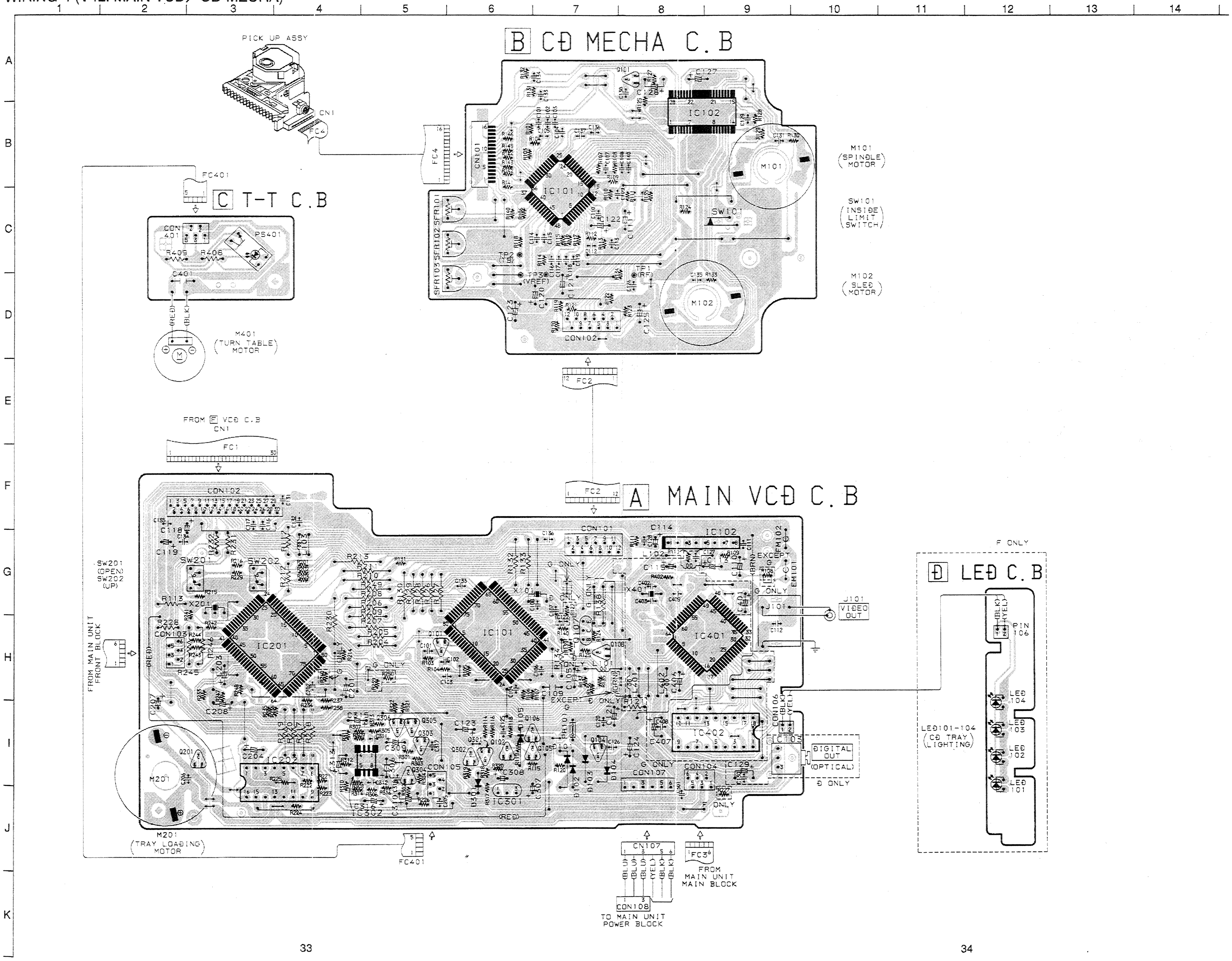
FROM MAIN UNIT
+2.5V
+5V
PD IC
LD
FOCUS COIL
TRACKING COIL
PD UP ASSY KSM-213B
FROM MAIN UNIT
M1
M2
SW1
(SPINDLE MOTOR)
(SLED MOTOR)
(INSIDE LIMIT SW)
D DRIVE C.B
FROM MAIN UNIT
CON401
M401
C401 0.1
R409 27k
R408 560
PS401 GP1S53V
(TURN TABLE MOTOR)
C T-T C.B
3ZG-2 C5N
4ZG-1 WR

WIRING-4 (V4L: MAIN VCD／CD MECHA)



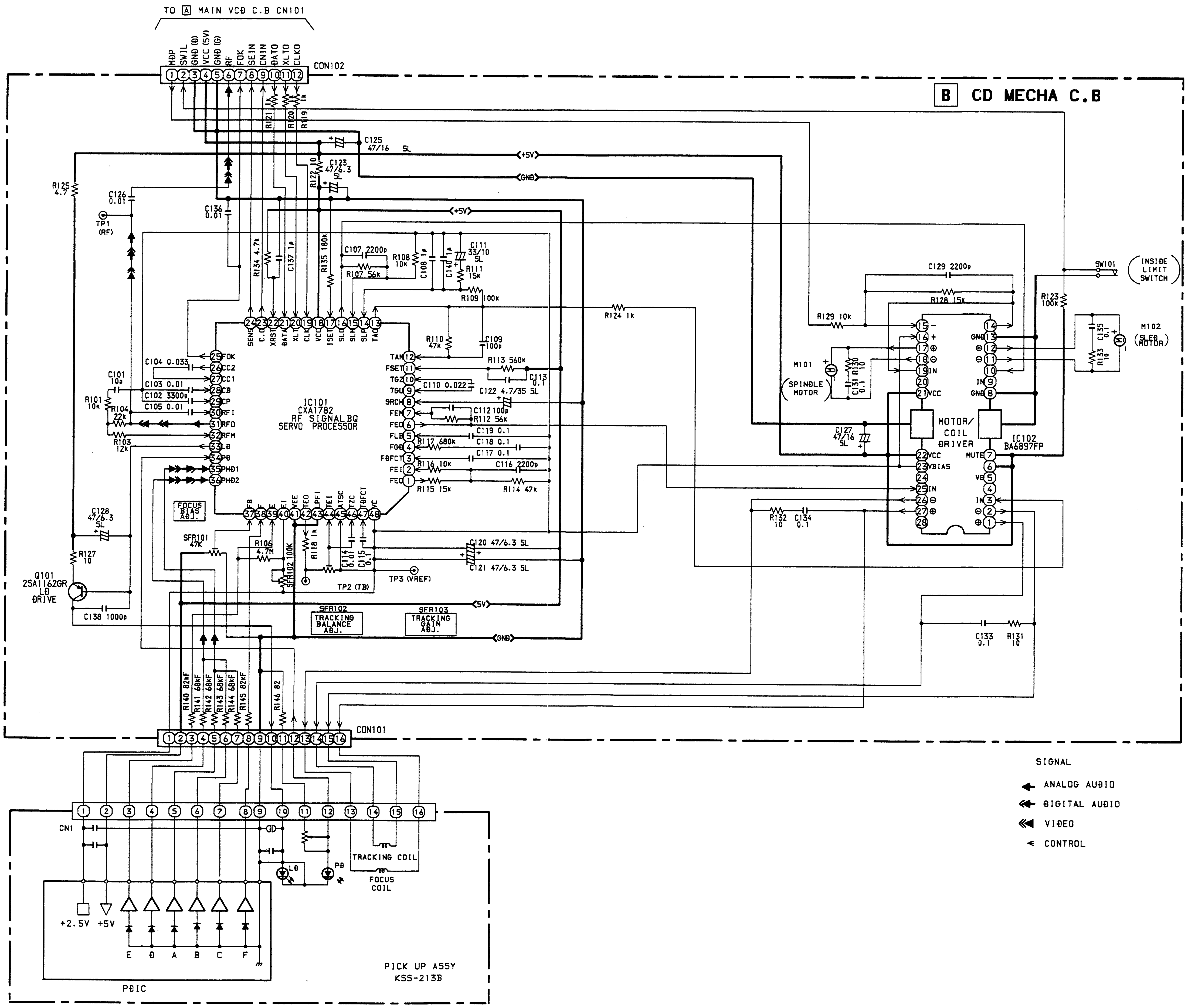
1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA
CON101
IC101
SFR101
SFR102
SFR103
TP2 (TE)
TP3 (VREF)
TP1 (RF)
CON102
FC2
FC401
C T-T C.B
CON 401
PS401
R409
R406
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
A M
CON102
CON101
SW201 (OPEN)
SW202 (UP)
SW201
SW202
X201
CON103
IC201
IC101
X101
X401
FROM MAIN UNIT FRONT BLOCK
IC202
IC301
IC302
CON105
CON107
M201 (TRAY LOADING MOTOR)
(RED)
FC401
CN107
(BLU)
(BLU)
(BLU)
(YEL)
(BLK)
(BLK)
CON108
TO MAIN UNIT POWER BLOCK
G ONLY
EXCEPT G ONLY

WIRING-4 (V4L: MAIN VCD／CD MECHA)

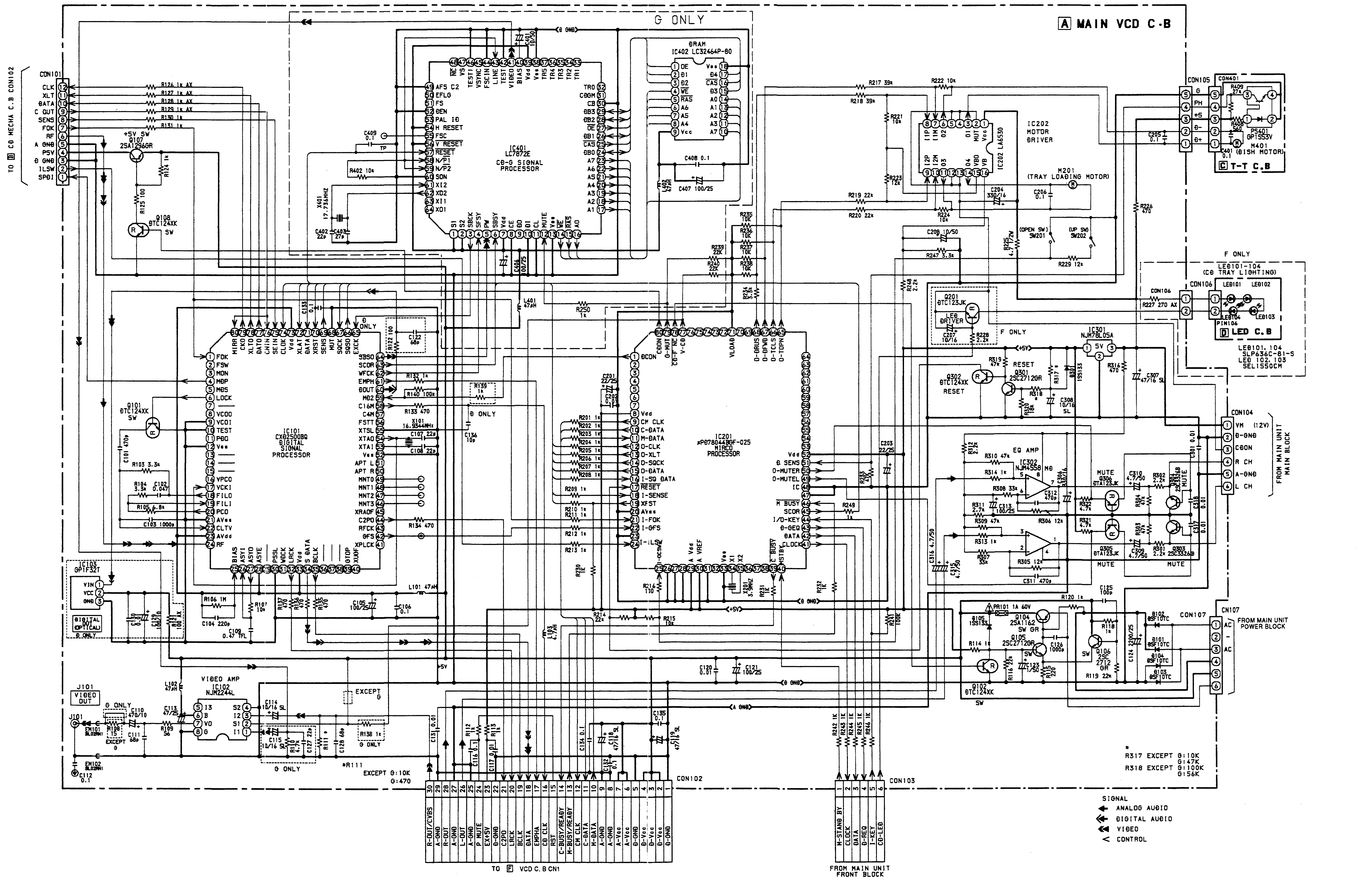


PICK UP ASSY
CN1
FC4
B CD MECHA C.B
CN101
IC101
IC102
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
SFR101
SFR102
SFR103
TP2
TP3 (VREF)
TP1 (RF)
CON102
FC2
FC401
C T-T C.B
CON401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
A MAIN VCD C.B
CON102
CON101
IC201
IC101
IC401
IC102
IC402
IC202
IC301
IC302
IC129
IC103
SW201 (OPEN) SW202 (UP)
SW201
SW202
CON103
CON105
CON104
CON107
CON106
X201
X101
X401
J101
J101 VIDEO OUT
DIGITAL OUT (OPTICAL)
D ONLY
G ONLY
F ONLY
EXCEPT
EM101
FM102
FROM MAIN UNIT FRONT BLOCK
(RED)
M201
M201 (TRAY LOADING MOTOR)
FC401
CN107
(BLU) (BLU) (BLU) (YEL) (BLK) (BLK)
CON108
TO MAIN UNIT POWER BLOCK
FC3
FROM MAIN UNIT MAIN BLOCK
F ONLY
D LED C.B
(BLK) (YEL)
PIN 106
LED104
LED103
LED102
LED101
LED101-104 (CD TRAY LIGHTING)
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K

SCHEMATIC DIAGRAM-5 (V4L: CD MECHA)

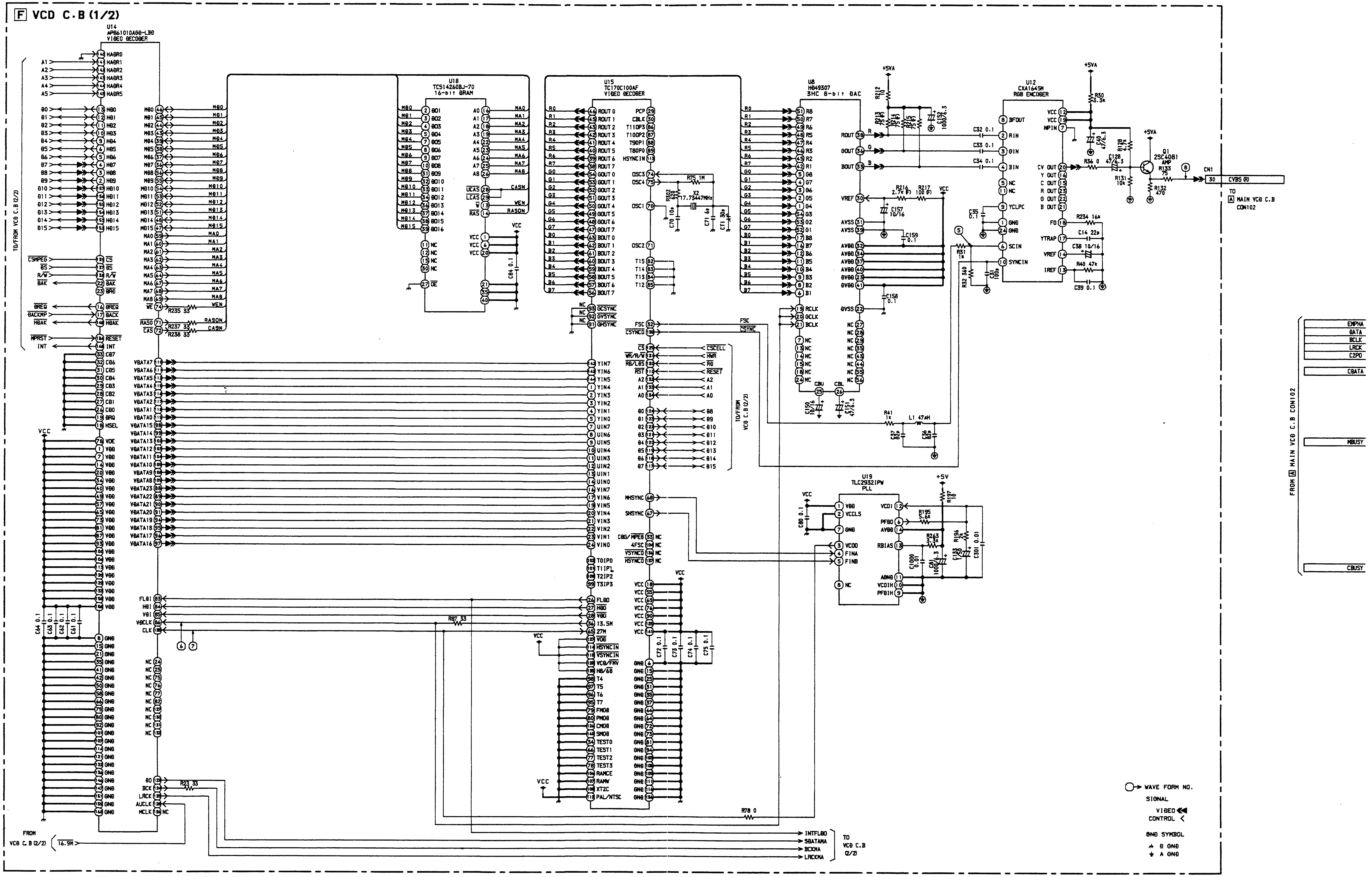

TO A MAIN VCD C.B CN101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
R121
R120 1K
R119 1K
C125 47/16 5L
+5V
GND
R122 10
C123 47/6.3 5L
R125 4.7
C126 0.01
TP1 (RF)
C136 0.01
R134 4.7K
C137 1μ
R135 180K
C107 2200p
R107 56K
R108 10K
C108 1μ
C140 1μ
C111 33/10 5L
R111 15K
R109 100K
R124 1K
IC101
CXA1782
RF SIGNAL BQ SERVO PROCESSOR
FOK
CC2
CC1
CB
CP
RFI
RFO
RFM
LD
PD
PD1
PD2
SENS
C.OUT
XRST
DATA
XLT
CLK
VCC
ISET
SLO
SLM
SLP
TAO
TAM
FSET
TGZ
TGU
SRCH
FEM
FEO
FLB
FGD
FDFCT
FEI
FE
C104 0.033
C103 0.01
C102 3300p
C105 0.01
C101 10p
R101 10K
R104 22K
R103 12K
R110 47K
C109 100p
R113 560K
C113 0.1
C110 0.022
C122 4.7/35 5L
C112 100p
R112 56K
C119 0.1
R117 680K
C118 0.1
C117 0.1
R116 10K
C116 2200p
R115 15K
R114 47K
FOCUS BIAS ADJ.
FB
TE
VEE
TEO
LPFI
TEI
ATSC
TZC
TDFCT
VC
SFR101 47K
R106 4.7M
R102 100K
R118 1K
C114 0.01
C115 0.1
C120 47/6.3 5L
C121 47/6.3 5L
TP2 (TB)
TP3 (VREF)
SFR102
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
5V
GND
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
R140 82KF
R141 68KF
R142 68KF
R143 68KF
R144 68KF
R145 82KF
R146 82
CON101
C129 2200p
R128 15K
R129 10K
R123 100K
SW101
INSIDE LIMIT SWITCH
M102 (SLED MOTOR)
C135 0.1
R133 10
M101
SPINDLE MOTOR
R130 10
C131 0.1
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6897FP
VCC
VBIAS
IN
GND
MUTE
VB
R132 10
C134 0.1
C133 0.1
R131 10
CN1
LD
PD
TRACKING COIL
FOCUS COIL
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

SCHEMATIC DIAGRAM-6 (V4L: MAIN VCD)

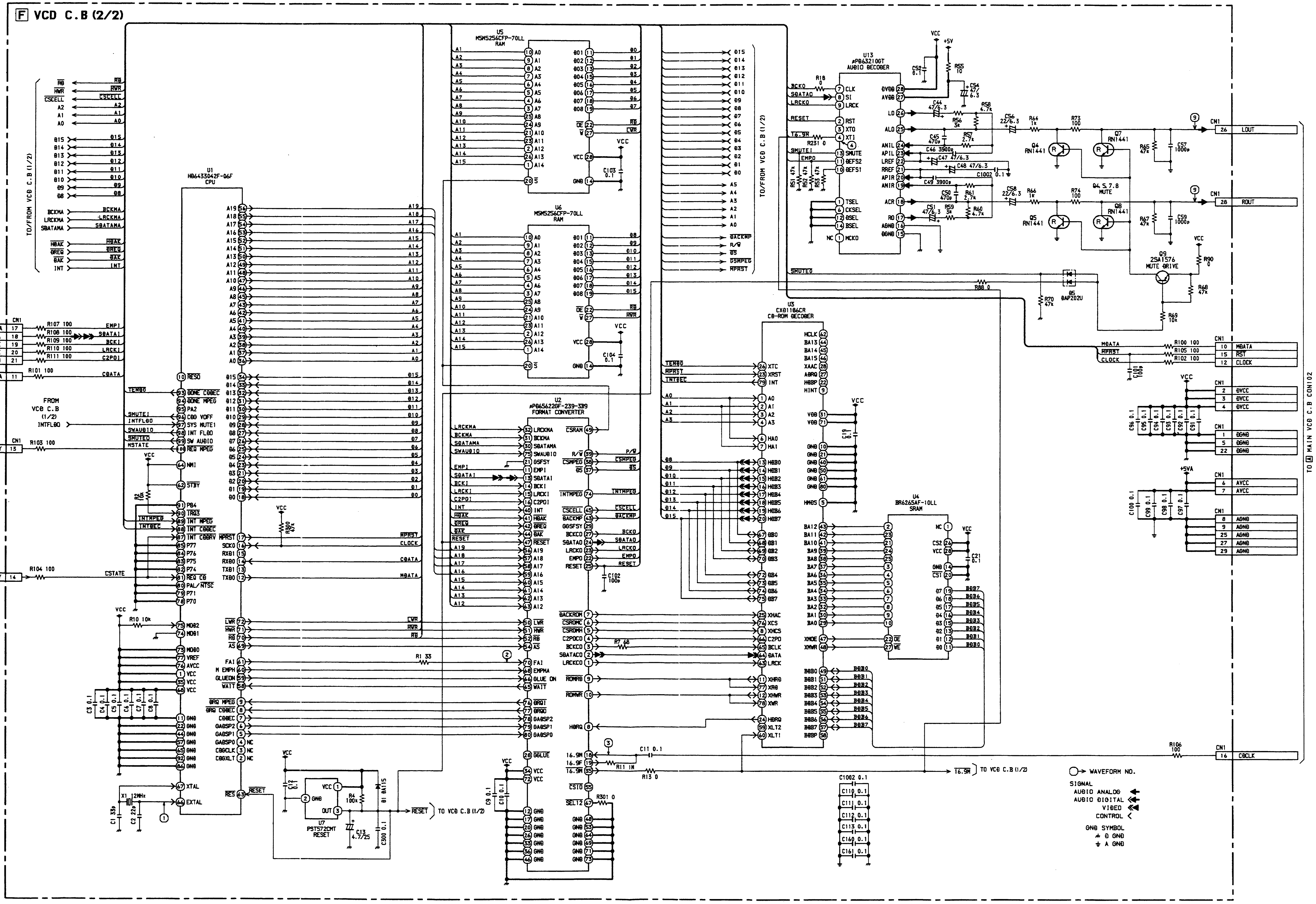


A MAIN VCD C.B
G ONLY
F ONLY
TO B CD MECHA C.B CON102
CON101
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
IC401 LC7872E CD-G SIGNAL PROCESSOR
DRAM IC402 LC32464P-80
X401 17.734MHz
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
IC201 μPD78044BGF-025 MIRCO PROCESSOR
X201 3.9MHz
IC202 MOTOR DRIVER
IC202 LA6530
M201 (TRAY LOADING MOTOR)
(OPEN SW) SW201
(UP SW) SW202
CON105
CON401
PS401 GP1S53V
M401 (DISH MOTOR)
C T-T C.B
LED101-104 (CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104 SLP636C-81-S
LED 102, 103 SEL1550CM
Q201 DTC123JK LED DRIVER
IC301 NJM78L05A
Q301 2SC2712GR
Q302 DTC124XK RESET
EQ AMP
IC302 NJM4558 MD
MUTE
Q306 DTA123JK
Q304 2SC3326B
Q305 DTA123JK
Q303 2SC3326B
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT MAIN BLOCK
CN107
CON107
FROM MAIN UNIT POWER BLOCK
PR101 1A 60V
Q104 2SA1162 SW GR
Q105 2SC2712GR SW
Q106 2SC2712 GR SW
Q102 DTC124XK SW
Q107 2SA1296GR +5V SW
Q108 DTC124XK SW
Q101 DTC124XK SW
IC103 GP1F32T
DIGITAL OUT (OPTICAL) G ONLY
J101 VIDEO OUT
VIDEO AMP IC102 NJM2244L
EXCEPT G
*R111 EXCEPT G:10K G:470
CON102
R-OUT/CVBS
A-GND
R-OUT
A-GND
L-OUT
P.MUTE
EX+5V
D-GND
C2PO
LRCK
BCLK
DATA
EMPHA
CD CLK
RST
C-BUSY/READY
M-BUSY/READY
CM CLK
M-DATA
A-GND
A-Vcc
D-GND
D-Vcc
D-GND
TO F VCD C.B CN1
CON103
M-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT FRONT BLOCK
*
R317 EXCEPT G:10K G:47K
R318 EXCEPT G:100K G:56K
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

SCHEMATIC DIAGRAM-7 (V4L: VCD 1/2)

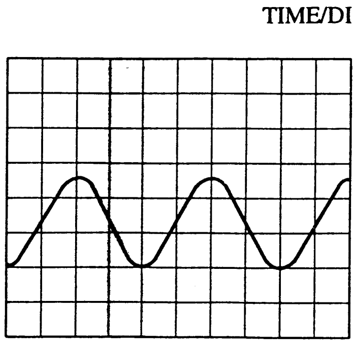

F VCD C.B (1/2)
U14
APB61010A68-LBD
VIDEO DECODER
U18
TC514260BJ-70
16-bit DRAM
U15
TC170C100AF
VIDEO DECODER
U8
HD49307
3HC 8-bit DAC
U12
CXA1645M
RGB ENCODER
Q1
2SC4081
AMP
U19
TLC2932IPW
PLL
X2
17.734475MHz
+5VA
+5V
VCC
CN1
CVBS (V)
TO
A MAIN VCD C.B
CON102
TO/FROM VCD C.B (2/2)
TO/FROM VCD C.B (2/2)
FROM A MAIN VCD C.B CON102
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY
FROM
VCD C.B (2/2)
16.9M
INTFLDO
SDATAMA
BCKMA
LRCKMA
TO
VCD C.B
(2/2)
WAVE FORM NO.
SIGNAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND

SCHEMATIC DIAGRAM-8 (V4L: VCD 2/2)

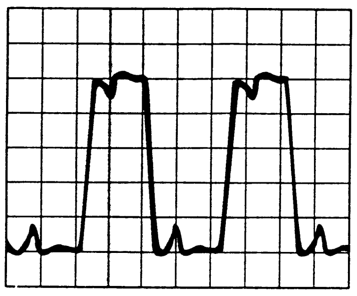

F VCD C.B (2/2)
TO/FROM VCD C.B (1/2)
U1 HD6433042F-06F CPU
U5 MSM5256CFP-70LL RAM
U6 MSM5256CFP-70LL RAM
U2 μPD65622GF-239-3B9 FORMAT CONVERTER
U3 CXD1186CR CD-ROM DECODER
U4 BR6265AF-10LL SRAM
U13 μPD63210GT AUDIO DECODER
U7 PST572CMT RESET
Q4 RN1441
Q5 RN1441
Q7 RN1441
Q8 RN1441
Q4,5,7,8 MUTE
Q9 2SA1576 MUTE DRIVE
D5 BAP202U
X1 12MHz
D1 DA115
CN1
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY
LOUT
ROUT
MDATA
RST
CLOCK
DVCC
DGND
AVCC
AGND
CDCLK
FROM VCD C.B (1/2) INTFLDD
RESET TO VCD C.B (1/2)
16.9M TO VCD C.B (1/2)
TO MAIN VCD C.B CON102
WAVEFORM NO.
SIGNAL
AUDIO ANALOG
AUDIO DIGITAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND

WAVE FORM

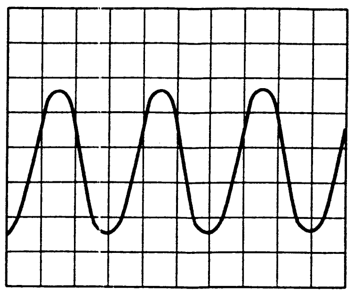
① U1 Pin (66) (EXTAL) VOLT/DIV: 1V TIME/DIV: 20nS



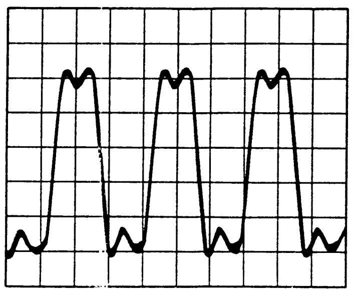
② U2 Pin (70) (FAI) VOLT/DIV: 1V TIME/DIV: 20nS



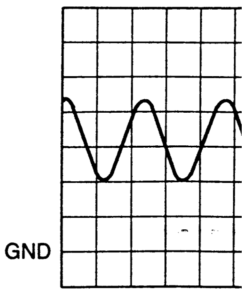
③ U2 Pin ⑱ (16.9M) VOLT/DIV: 1V TIME/DIV: 20nS



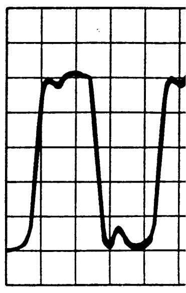
④ U13 Pin ④ (XTI) VOLT/DIV: 1V TIME/DIV: 20nS



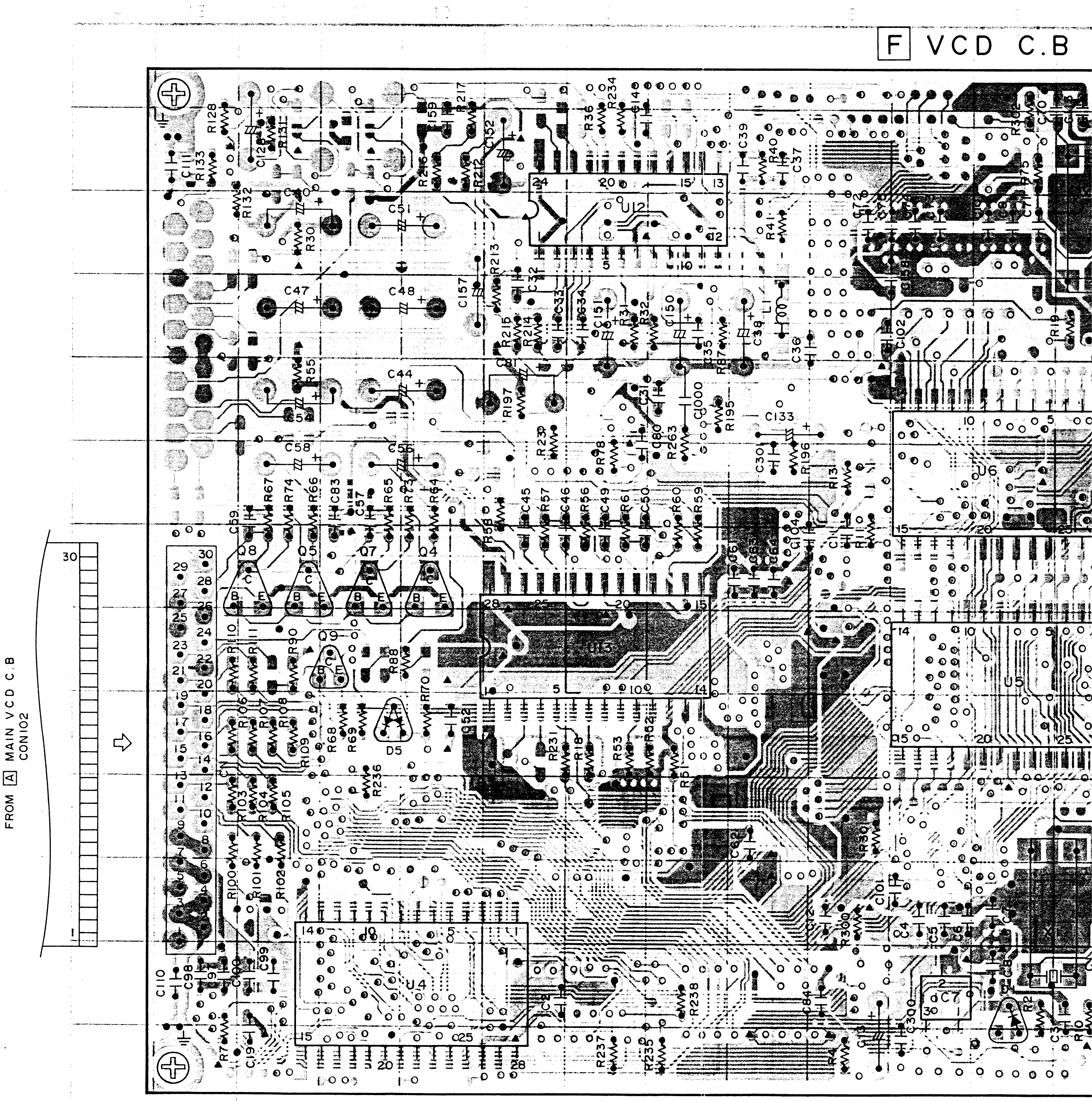
⑤ U12 Pin ⑥ (SC IN



⑥ U14 Pin (86) (VD Cl



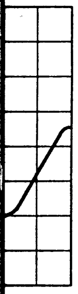
WIRING-5 (V4L: VCD)


F VCD C.B
FROM A MAIN VCD C.B CON102
30
1
U12
U13
U6
U5
U4
Q8
Q5
Q7
Q4
Q9
D5
L1
C47
C48
C44
C51
C58
C56
C133
R128
R133
R132
R30
R55
R197
R213
R236
R237
R238

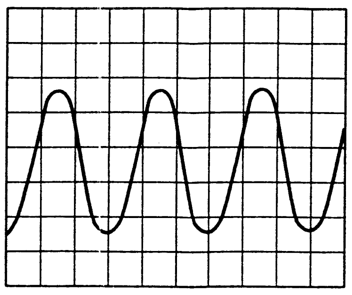
Through-Hole Note

SIGNAL	VCC	+5V	A GND	D GND
○	▲	▲	●	●

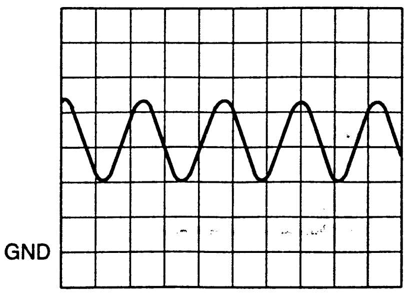
LT/DIV: 1V
ME/DIV: 20nS



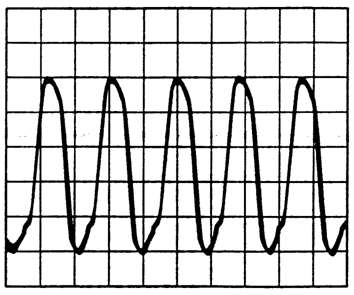
③ U2 Pin ⑱ (16.9M) VOLT/DIV: 1V
TIME/DIV: 20nS



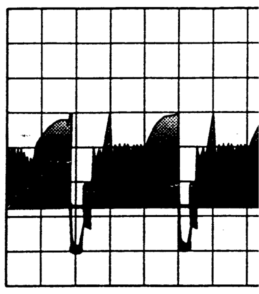
⑤ U12 Pin ⑥ (SC IN) VOLT/DIV: 1.0V
TIME/DIV: 0.1μS



⑦ U14 Pin ⑬⑤ (CLK) VOLT/DIV: 1V
TIME/DIV: 20nS

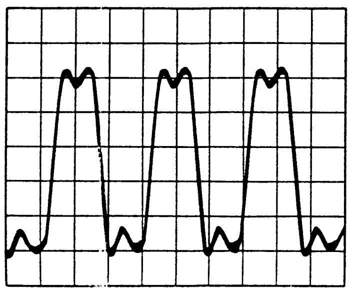


KARAOKE

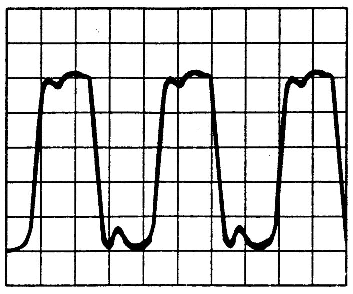


LT/DIV: 1V
ME/DIV: 20nS

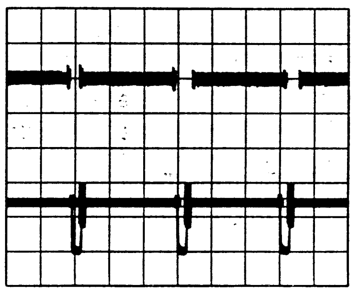
④ U13 Pin ④ (XTI) VOLT/DIV: 1V
TIME/DIV: 20nS



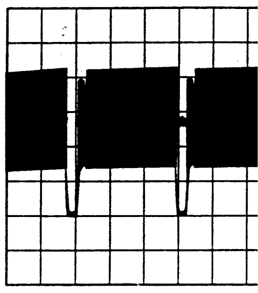
⑥ U14 Pin ⑧⑥ (VD CLK) VOLT/DIV: 1V
TIME/DIV: 20nS



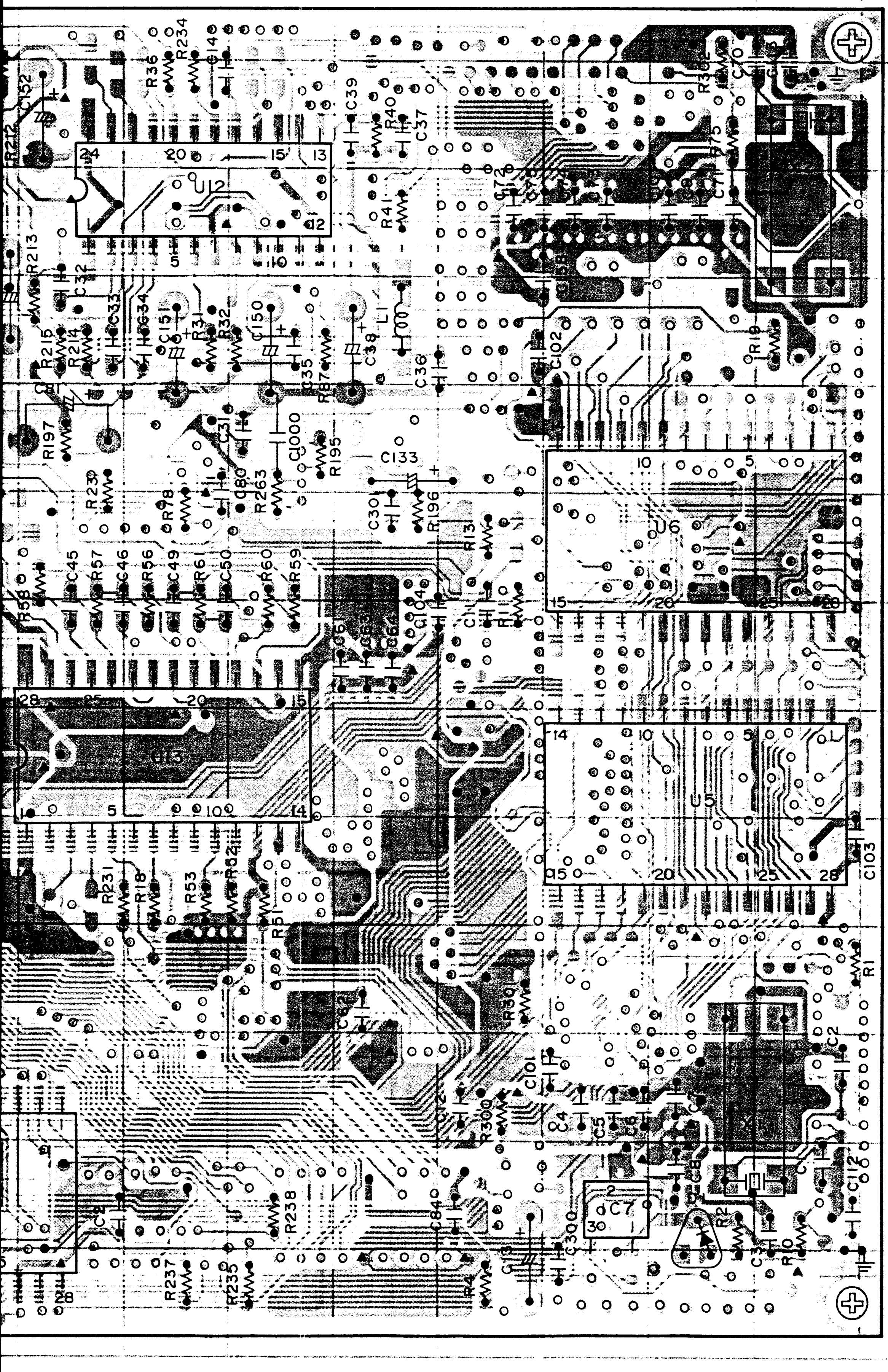
⑧ CN1 Pin ㉚ (CVBS R) VOLT/DIV: 200mV
WHITE TIME/DIV: 20μS



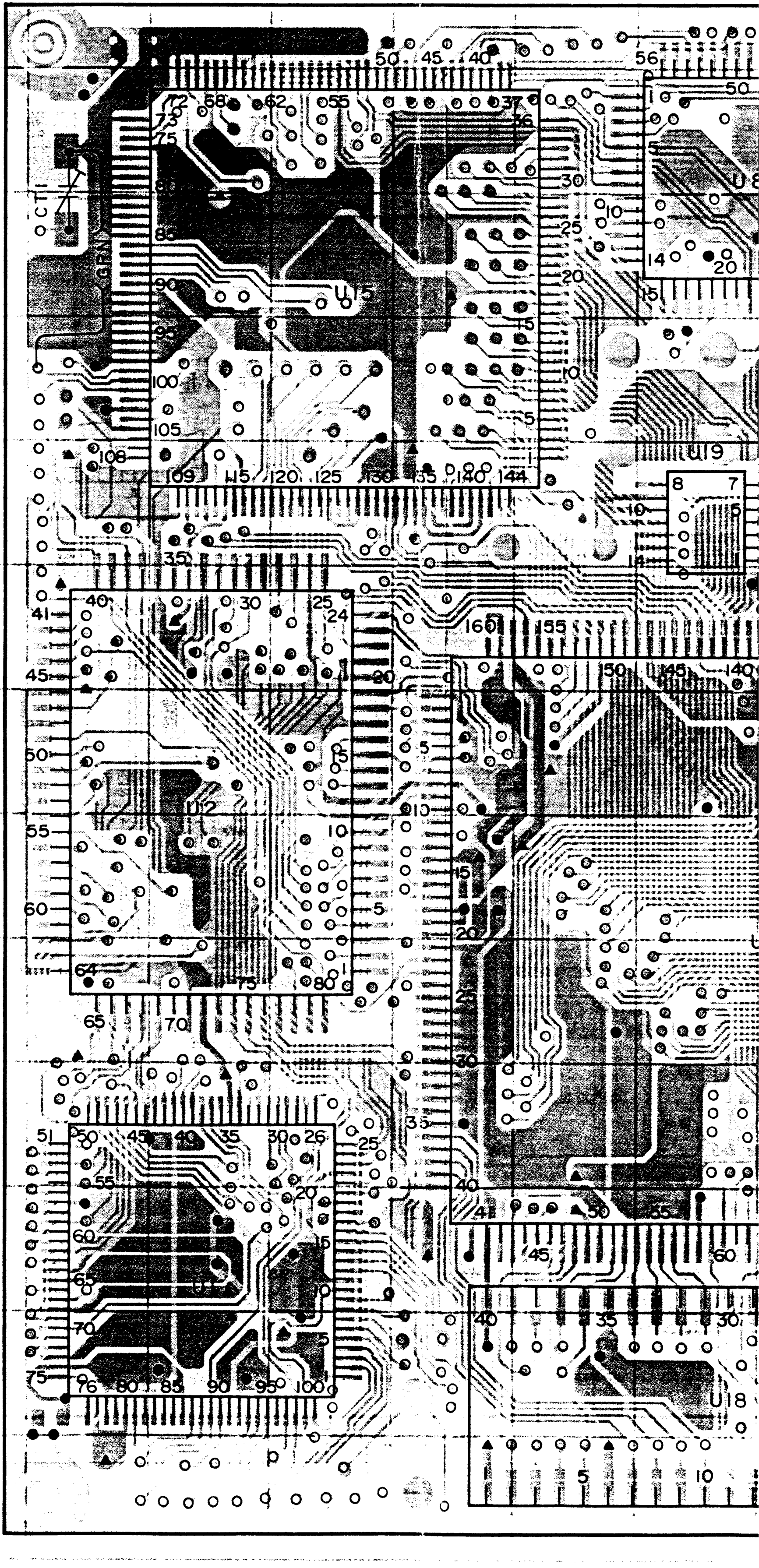
BLUE



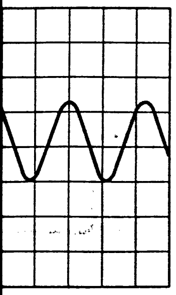
F VCD C.B


U12
U6
U5
U15
C133
R196
R195
C1000
C102
R19
C103
C300
C7
R238
R237
C84

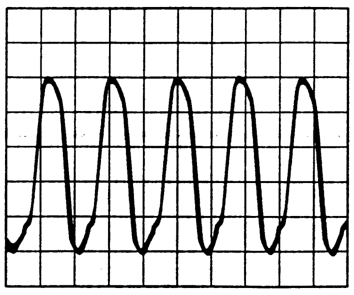
F VCD C.B


U15
U12
U19
U18
C71
30
25
20
10
50
45
40

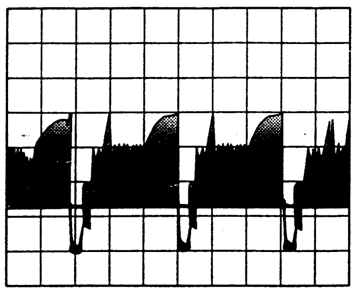
N) VOLT/DIV: 1.0V
TIME/DIV: 0.1µS



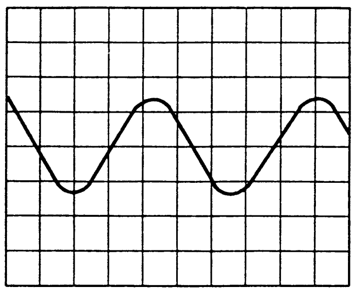
⑦ U14 Pin (135) (CLK) VOLT/DIV: 1V
TIME/DIV: 20nS



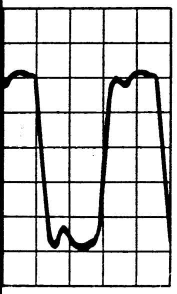
KARAOKE VOLT/DIV: 200mV
TIME/DIV: 20µS



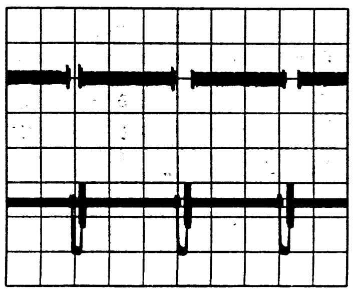
⑨ CN1 Pin ㉖ (L OUT)
CN1 Pin ㉘ (R OUT)
1kHz OUTPUT
VOLT/DIV: 1.0V
TIME/DIV: 0.2mS



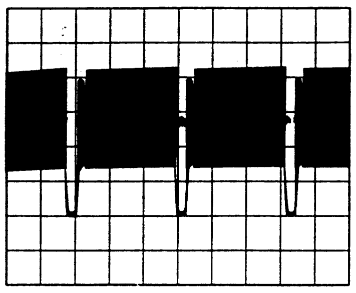
LK) VOLT/DIV: 1V
TIME/DIV: 20nS

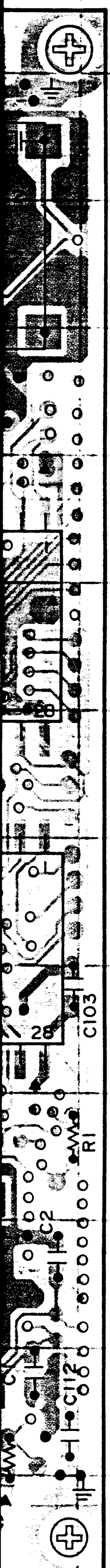


⑧ CN1 Pin ㉚ (CVBS R)
WHITE
VOLT/DIV: 200mV
TIME/DIV: 20µS

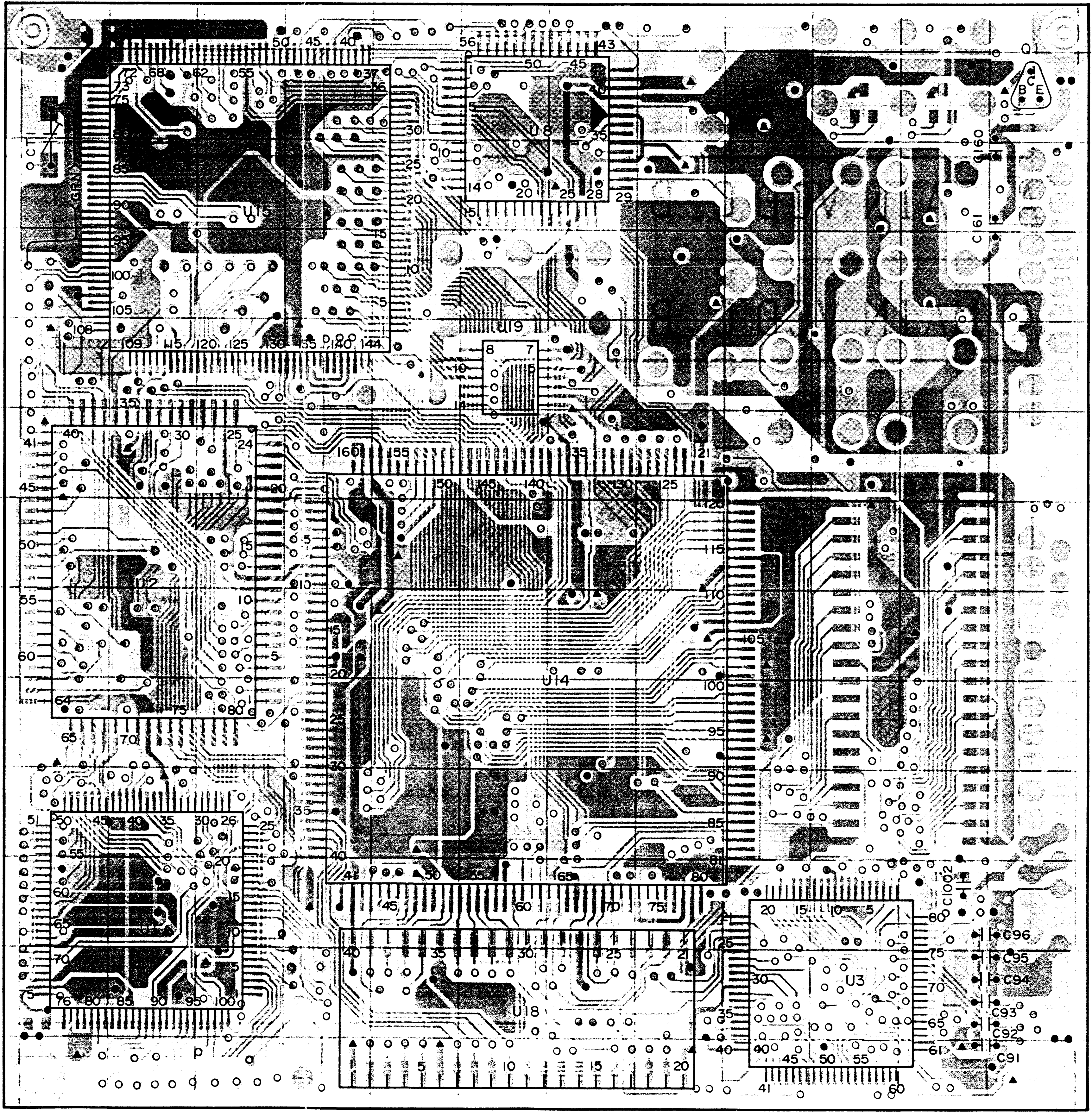


BLUE VOLT/DIV: 100mV
TIME/DIV: 20µS

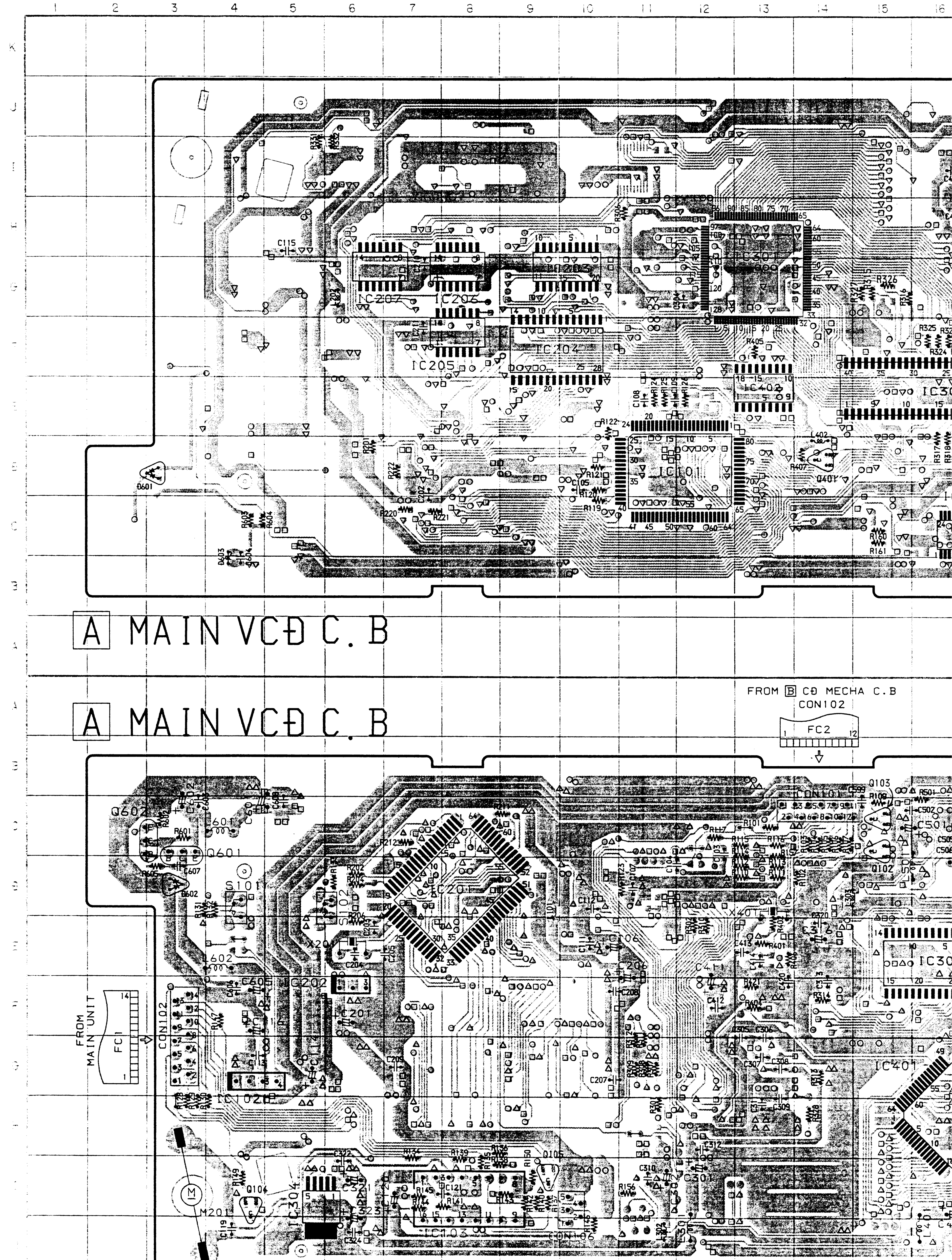


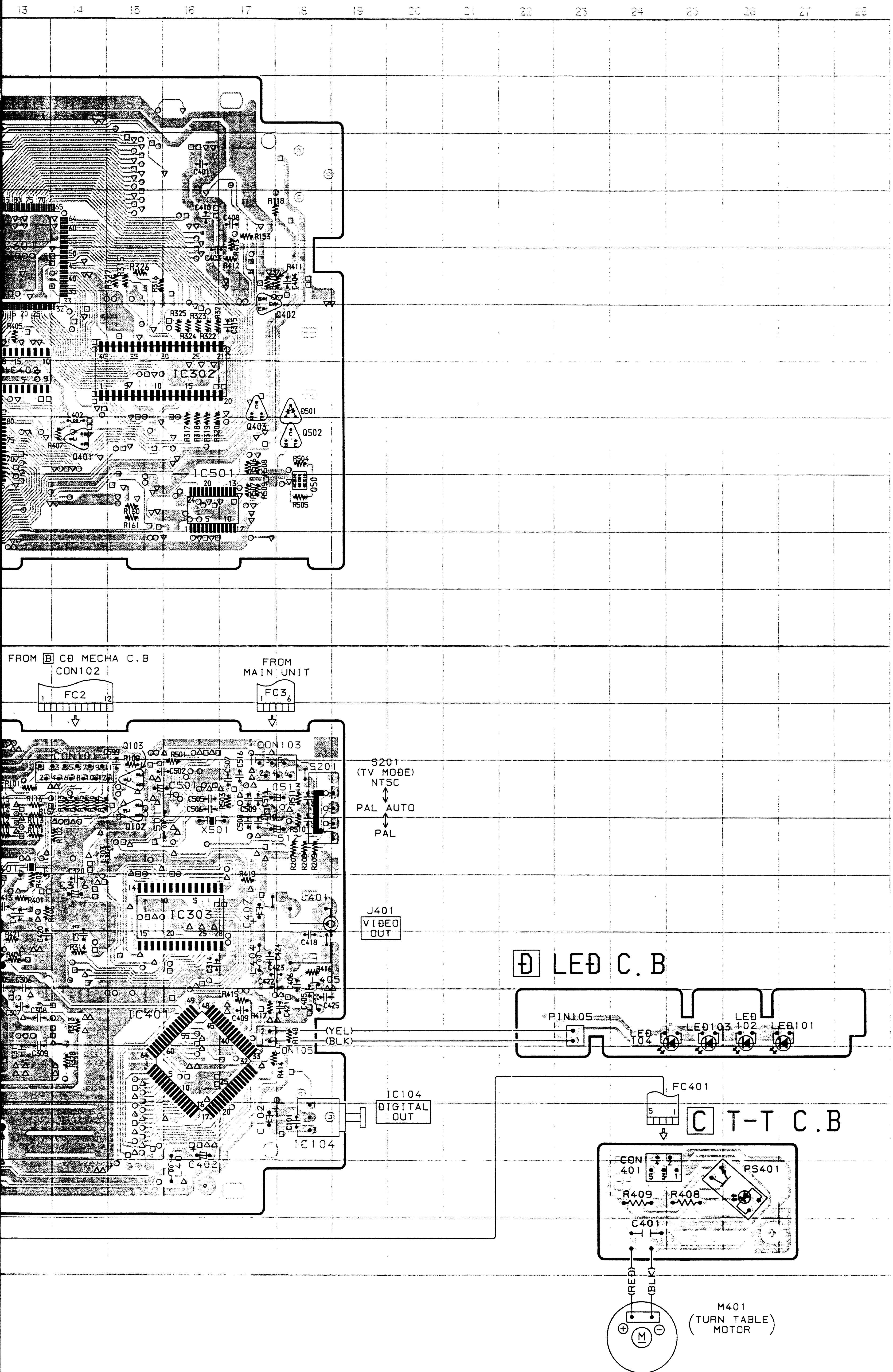


F VCD C.B


U15
U8
U19
U12
U14
U18
U3
Q1
C
B
E
C160
C161
CT1
C1002
C96
C95
C94
C93
C92
C91

WIRING-6 (V5: MAIN VCD)


A MAIN VCD C.B
A MAIN VCD C.B
FROM B CD MECHA C.B
CON102
FC2
FROM MAIN UNIT
FC1
CON102
FC401
IC101
IC102
IC103
IC104
IC201
IC202
IC205
IC206
IC207
IC301
IC304
IC401
IC402
Q601
Q602
Q101
Q102
Q103
Q104
Q105
Q401
S101
M201
X201
X401
CON101
CON106
L601
L602
L402
L401
C115
C119


13
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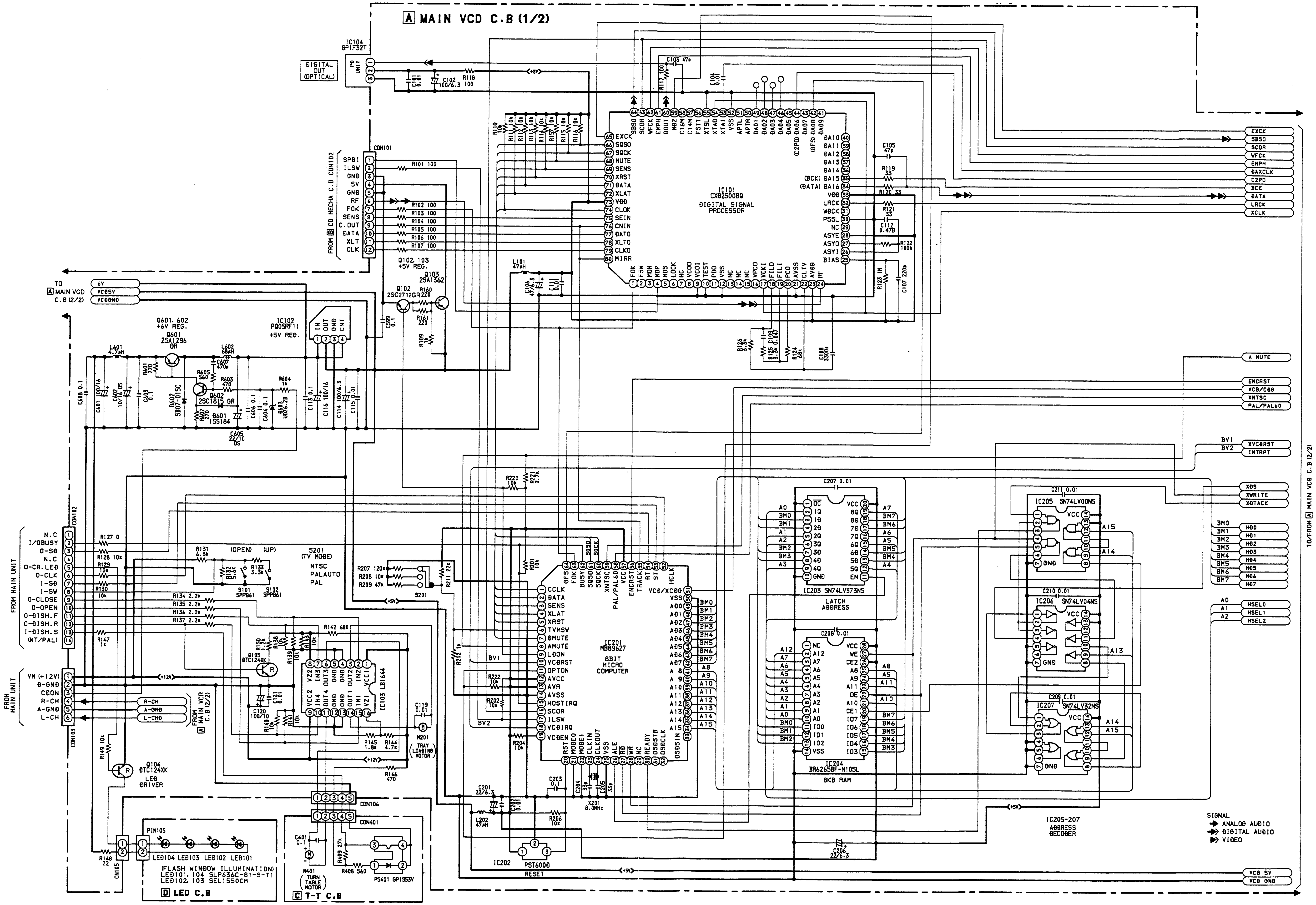
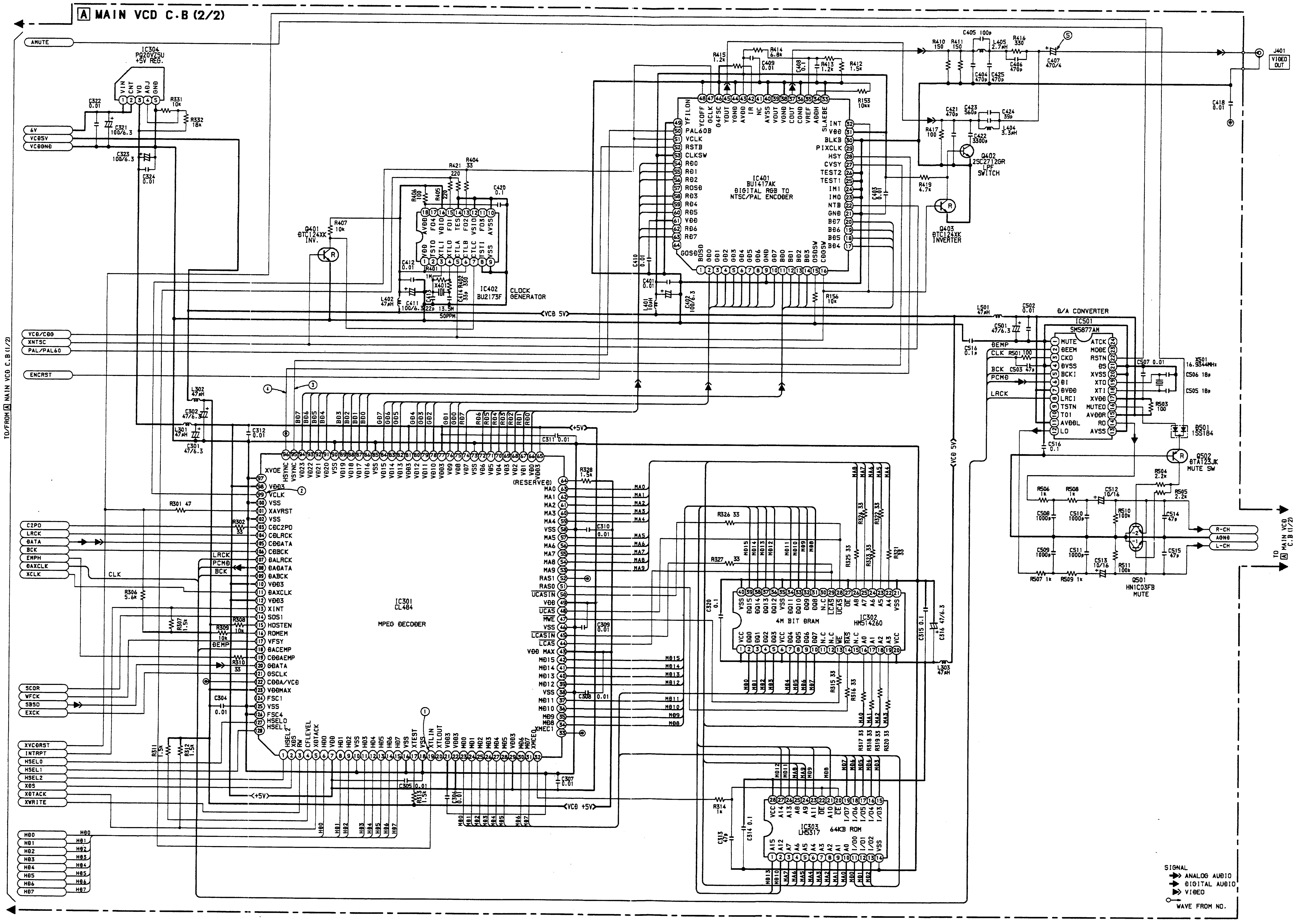
27
28
IC301
IC302
IC402
IC501
Q401
Q402
Q403
Q501
Q502
R118
R153
R411
R412
R405
R407
R160
R161
R504
R505
C401
C403
C404
C408
C410
C315
R322
R323
R324
R325
R326
R327
R317
R318
R319
R320
L402
FROM B CD MECHA C.B
CON102
FC2
FROM
MAIN UNIT
FC3
CON101
CON103
Q102
Q103
R101
R103
R104
R106
R501
C501
C502
C505
C506
C507
C508
C509
C512
C513
C516
X501
L501
S201
S201
(TV MODE)
NTSC
PAL AUTO
PAL
R207
R208
R209
R419
IC303
J401
J401
VIDEO
OUT
C407
C418
C424
C425
C422
R415
R416
R417
R418
C409
IC401
CON105
(YEL)
(BLK)
C402
L4
IC104
C102
C101
IC104
DIGITAL
OUT
D LED C.B
PIN105
LED104
LED103
LED102
LED101
FC401
C T-T C.B
CON401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE
MOTOR)
M

SCHEMATIC DIAGRAM-9 (V5: MAIN VCD 1/2)



A MAIN VCD C.B (1/2)
IC104 GP1F32T
DIGITAL OUT (OPTICAL)
CON101
FROM B CD MECHA C.B CON102
SPDI ILSW GND 5V GND RF FOK SENS C.OUT DATA XLT CLK
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
Q102, 103 +5V REG.
Q102 2SC2712GR
Q103 2SA1362
IC102 PQ05RF11 +5V REG.
Q601, 602 +6V REG.
Q601 2SA1296 GR
Q602 2SC1815 GR
D601 1SS184
D602 SB07-015C
D603 UDZ6.2B
TO A MAIN VCD C.B (2/2)
6V
VCD5V
VCDGND
CON102
FROM MAIN UNIT
N.C
I/DBUSY
D-SD
N.C
D-CD.LED
D-CLK
I-SD
I-SW
D-CLOSE
D-OPEN
D-DISH.F
D-DISH.R
I-DISH.S
(NT/PAL)
S201 (TV MODE) NTSC PALAUTO PAL
S101 SPPB61
S102 SPPB61
Q105 DTC124XK
IC103 LB1644
M201 TRAY LOADING MOTOR
FROM MAIN UNIT
VM (+12V)
D-GND
CDON
R-CH
A-GND
L-CH
CON103
FROM A MAIN VCR C.B (2/2)
Q104 DTC124XK LED DRIVER
CN105
PIN105
LED104 LED103 LED102 LED101
(FLASH WINDOW ILLUMINATION)
LED101, 104 SLP636C-01-5-T1
LED102, 103 SEL1550CM
D LED C.B
CON106
CON401
M401 (TURN TABLE MOTOR)
PS401 GP1S53V
C T-T C.B
IC201 MB89627 8BIT MICRO COMPUTER
IC202 PST600D RESET
X201 8.0MHz
IC203 SN74LV373NS LATCH ADDRESS
IC204 BR6265BF-N10SL 8KB RAM
IC205 SN74LV00NS
IC206 SN74LV04NS
IC207 SN74LV32NS
IC205-207 ADDRESS DECODER
EXCK SBSO SCOR WFCK EMPH DAXCLK C2PO BCK DATA LRCK XCLK
A MUTE
ENCRST
VCD/CDD
XNTSC
PAL/PAL60
BV1 BV2
XVCDRST
INTRPT
XDS
XWRITE
XDTACK
BM0 BM1 BM2 BM3 BM4 BM5 BM6 BM7
HD0 HD1 HD2 HD3 HD4 HD5 HD6 HD7
A0 A1 A2
HSEL0 HSEL1 HSEL2
VCD 5V
VCD GND
TO/FROM A MAIN VCD C.B (2/2)
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO

SCHEMATIC DIAGRAM-10 (V5: MAIN VCD 2/2)



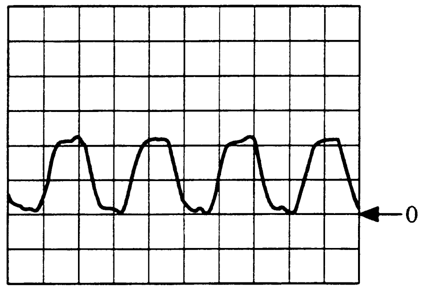
A MAIN VCD C.B (2/2)
AMUTE
IC304 PQ20VZ5U +5V REG.
6V
VCD5V
VCDGND
IC402 BU2173F CLOCK GENERATOR
Q401 DTC124XK INV.
IC401 BU1417AK DIGITAL RGB TO NTSC/PAL ENCODER
Q402 2SC2712GR LPF SWITCH
Q403 DTC124XK INVERTER
J401 VIDEO OUT
VCD/CDG
XNTSC
PAL/PAL60
ENCRST
TO/FROM A MAIN VCD C.B (1/2)
IC301 CL484 MPEG DECODER
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
XCLK
SCOR
WFCK
SBSO
EXCK
XVCDRST
INTRPT
HSEL0
HSEL1
HSEL2
XDS
XDTACK
XWRITE
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
IC302 HM514260 4M BIT DRAM
IC303 LH5317 64KB ROM
D/A CONVERTER IC501 SM5877AM
Q502 DTA123JK MUTE SW
Q501 HN1C03FB MUTE
R-CH
AGND
L-CH
TO A MAIN VCD C.B (1/2)
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
WAVE FROM NO.

WAVE FORM

①

IC301 Pin ⑲ (GCK)
40.5MHz
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO

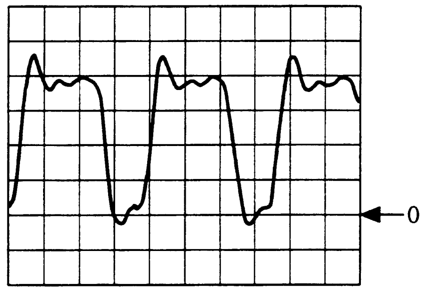
VOLT/DIV: 1V
TIME/DIV: 10nS



②

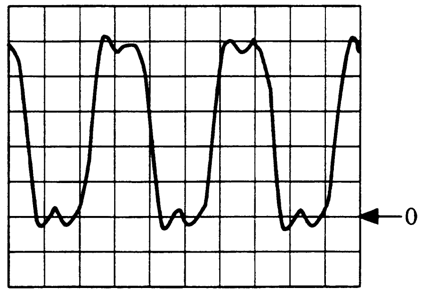
IC301 Pin (99) (VCLK)
27MHz±1350Hz
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS



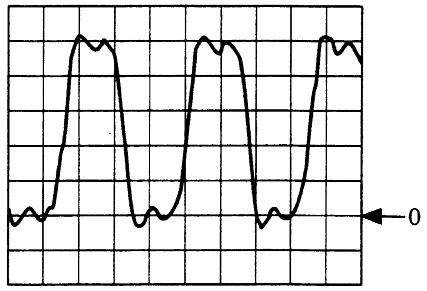
28.375MHz
CDG PLAY
TV MODE: • PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS



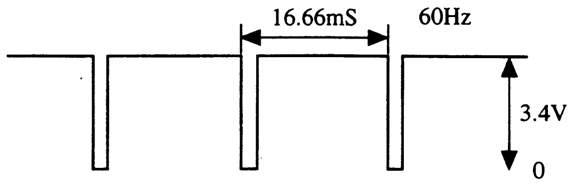
28.6363MHz
CDG PLAY
TV MODE: • NTSC

VOLT/DIV: 1V
TIME/DIV: 10nS

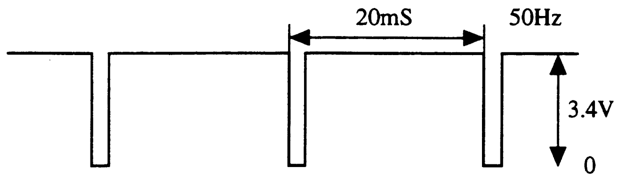


③

IC301 Pin (95) (V SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO

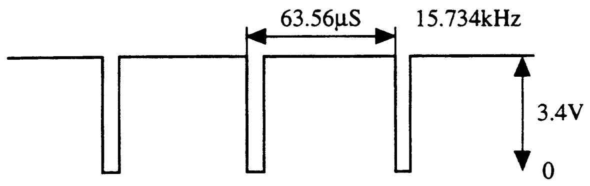

16.66mS
60Hz
3.4V
0

VCD, CDG PLAY
TV MODE: PAL

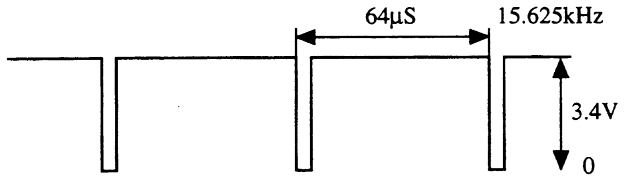

20mS
50Hz
3.4V
0

④

IC301 Pin (96) (H SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO


63.56µS
15.734kHz
3.4V
0

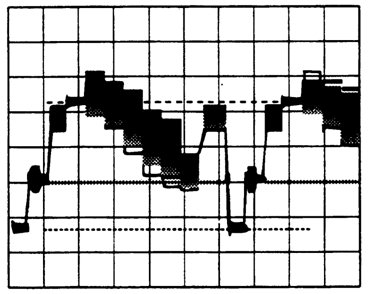
VCD, CDG PLAY
TV MODE: PAL


64µS
15.625kHz
3.4V
0

⑤

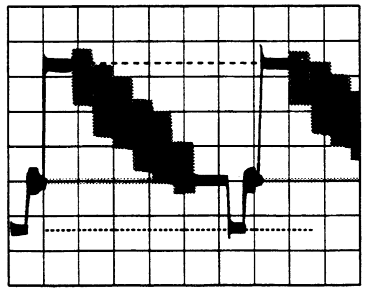
VIDEO OUT
C407 ⊖ side
CDG PLAY: CD-T03 TRACK2
TV MODE:• NTSC

VOLT/DIV: 200mV
TIME/DIV: 10µS

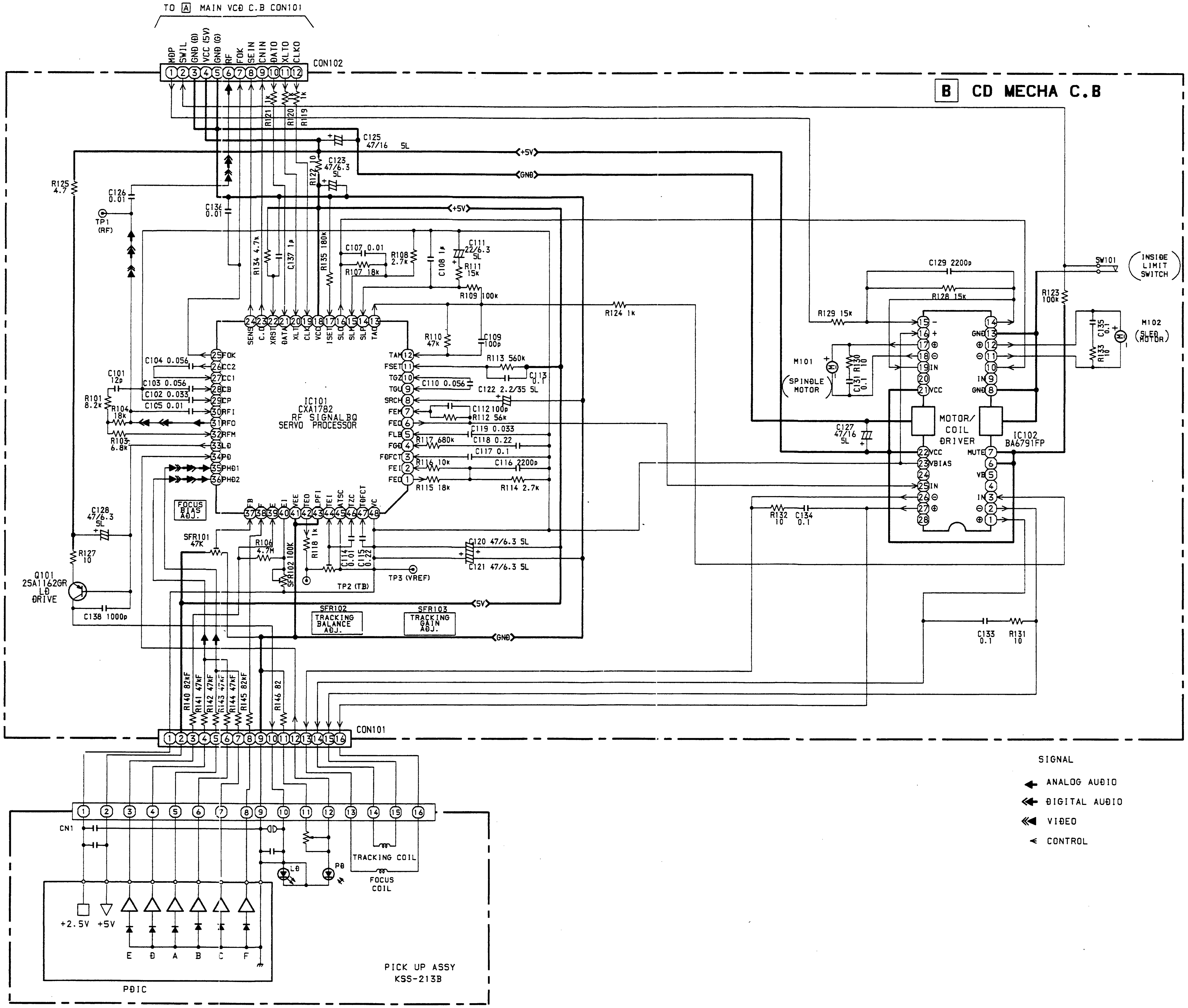


VCD PLAY: CD-T05 TRACK4
TV MODE:• NTSC

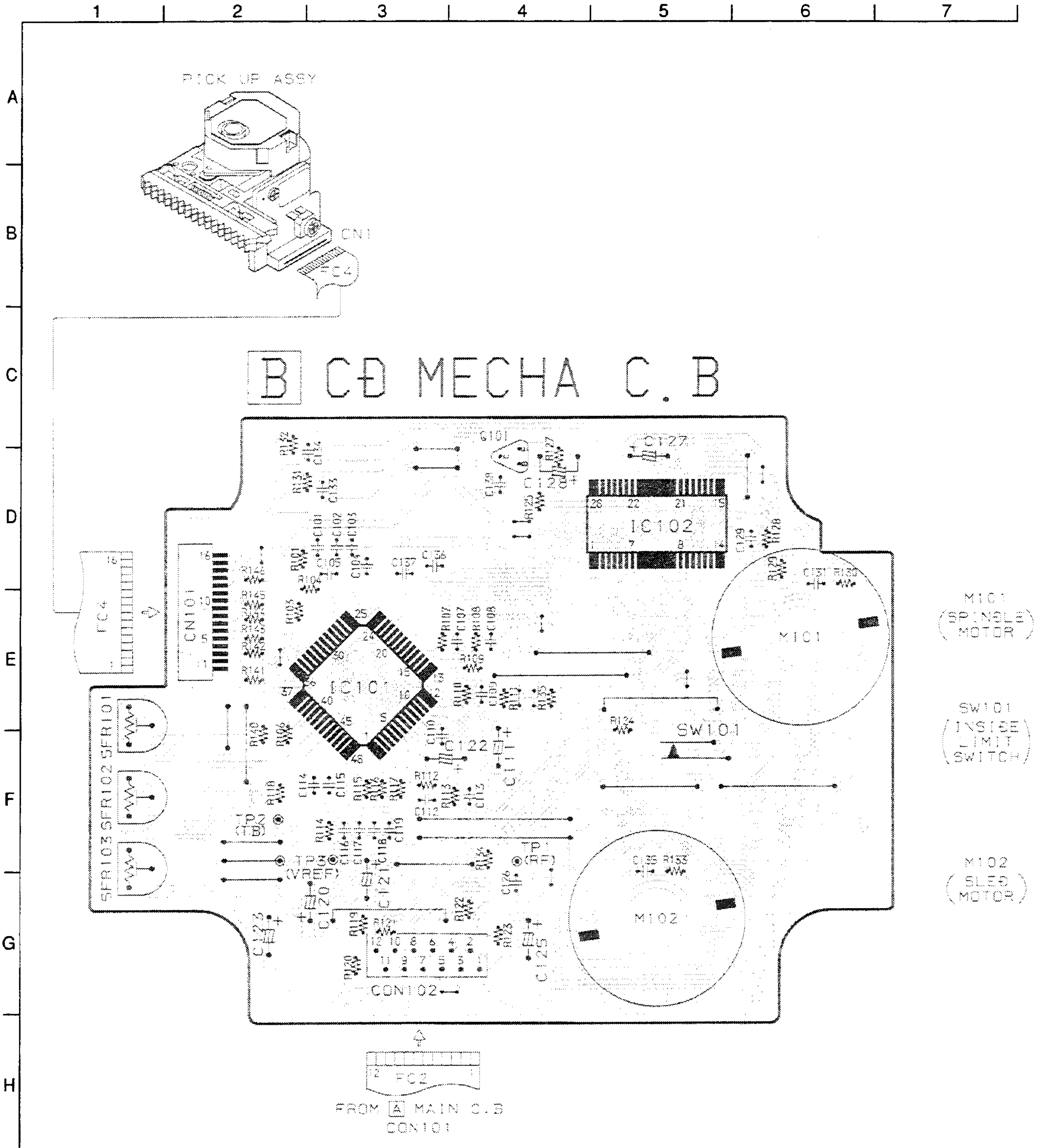
VOLT/DIV: 200mV
TIME/DIV: 10µS



SCHEMATIC DIAGRAM-11 (V5: CD MECHA)


TO A MAIN VCD C.B CON101
MDP
SW1L
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
R121 1k
R120 1k
R119 1k
C125 47/16 5L
C123 47/6.3 5L
R122 10
+5V
GND
R125 4.7
C126 0.01
C136 0.01
TP1 (RF)
R134 4.7k
C137 1μ
R135 180k
C107 0.01
R108 2.7k
R107 18k
C108 1μ
C111 22/6.3 5L
R111 15k
R109 100k
R124 1k
C129 2200p
R128 15k
R129 15k
R123 100k
SW101
INSIDE LIMIT SWITCH
M102 (SLED MOTOR)
C135 0.1
R133 10
M101
SPINDLE MOTOR
R130 10
C131 0.1
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6791FP
R132 10
C134 0.1
C133 0.1
R131 10
IC101 CXA1782 RF SIGNAL DQ SERVO PROCESSOR
SENS C.OUT XRST DATA XLT CLK VCC ISET SLO SL- SLP TAO
FOK CC2 CC1 CB CP RFI RFO RFM LD PD PHD1 PHD2
TA- FSET TGZ TGU SRCH FE- FEO FLB FGD FDFCT FEI FE-
FB F E EI VEE FEO TFI ATSC TZC TDFCT VC
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.056
C122 2.2/35 5L
C112 100p
R112 56k
C119 0.033
R117 680k
C118 0.22
C117 0.1
R116 10k
C116 2200p
R115 18k
R114 2.7k
C104 0.056
C101 12p
C103 0.056
C102 0.033
C105 0.01
R101 8.2k
R104 18k
R103 6.8k
FOCUS BIAS ADJ.
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.22
C120 47/6.3 5L
C121 47/6.3 5L
TP2 (TB)
TP3 (VREF)
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
5V
GND
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
R140 82kF
R141 47kF
R142 47kF
R143 47kF
R144 47kF
R145 82kF
R146 82
CON101
CN1
TRACKING COIL
FOCUS COIL
LD
PD
+2.5V
+5V
E D A B C F
PDIC
PICK UP ASSY KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

WIRING-7 (V5: CD MECHA)


1
2
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A
B
C
D
E
F
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA C.B
IC101
IC102
CN101
M101
M102
SW101
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
SFR101
SFR102
SFR103
TP1 (RF)
TP2 (TE)
TP3 (VREF)
C122
C127
C111
C120
C121
C123
C125
CON102
FC2
FROM A MAIN C.B CON101

IC DESCRIPTION

IC, CXD2500BQ

Pin No.	Pin Name	I/O	Description
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter selection output.
3	MON	O	Spindle motor ON-OFF control output.
4	MDP	O	Spindle motor servo control.
5	MDS	O	Spindle motor servo control.
6	LOCK	O	H output when GFS is sampled at 460 Hz and GFS is H. L output when L is continuously 8 times.
7	NC	—	Not used.
8	VCOO	O	Oscillator circuit output for analog EFM PLL.
9	VCOI	I	Oscillator circuit input for analog EFM PLL. fLOCK = 8.6436 MHz.
10	TEST	I	TEST terminal. Normally GND.
11	PDO	O	Charge pump output for analog EFM PLL.
12	VSS	—	GND.
13	NC	—	Not used.
14	NC	—	Not used.
15	NC	—	Not used.
16	VPCO	O	Charge pump output for vari-pitch PLL.
17	VCKI	I	Clock input from external VCO for vari-pitch. fc center = 16.9344 MHz.
18	FILO	O	Filter output for master PLL (slave = digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for
21	AVSS	—	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVDD	—	Analog power supply. (+3.5 V)
24	RF	I	EFM signal input.
25	BIAS	I	Asymmetry circuit constant current input.
26	ASYI	I	Asymmetry comparate voltage input.
27	ASYO	O	EFM full swing output (L = Vss, H = VDD.)
28	ASYE	I	L: asymmetry circuit OFF, H: asymmetry circuit ON.
29	NC	—	Not used.
30	PSSL	I	Audio data output mode selection input. Serial output at L, parallel output at H.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2 Fs.
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs.
33	VDD		Power supply. (+3.5 V)
34	S DATA	O	DA16 (MSB) output when PSSL = H. 48-bit slot serial data when PSSL = L. (2's COMP, MSB first).
35	BCLK	O	DA15 output when PSSL = H. 48-bit slot bit clock when PSSL = L.
36	NC	O	DA14 output when PSSL = H. 64-bit slot serial data when PSSL = L. (2's COMP, MSB first).
37	NC	O	DA13 output when PSSL = H. 64-bit slot bit clock when PSSL = L.
38	NC	O	DA12 output when PSSL = H. 64-bit slot LR clock when PSSL = L.

Pin No.	Pin Name	I/O	Description
39	GTOP	O	DA11 output when PSSL = H. GTOP output when PSSL = L.
40	XUGF	O	DA10 output when PSSL = H. XUGF output when PSSL = L.
41	XPLCK	O	DA09 output when PSSL = H. XPLCK output when PSSL = L.
42	GFS	O	DA08 output when PSSL = H. GFS output when PSSL = L.
43	RFCK	O	DA07 output when PSSL = H. RFCK output when PSSL = L.
44	C2PO	O	DA06 output when PSSL = H. C2P0 output when PSSL = L.
45	XRAOF	O	DA05 output when PSSL = H. XRAOFoutput when PSSL = L.
46	MNT3	O	DA04 output when PSSL = H. MNT3 output when PSSL = L.
47	MNT2	O	DA03 output when PSSL = H. MNT2 output when PSSL = L.
48	MNT1	O	DA02 output when PSSL = H. MNT1 output when PSSL = L.
49	MNT0	O	DA01 output when PSSL = H. MNT0 output when PSSL = L.
50	APTR	O	Aperture correction control output. H when R channel.
51	APTL	O	Aperture correction control output. H when L channel.
52	VSS	—	GND.
53	XTAI	I	Input to 16.9344 MHz X'tal oscillator circuit. or 33.8688 MHz input.
54	XTAO	O	16.9344 MHz X'tal oscillator output.
55	XTSL	I	X'tal selection input. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
56	FSTT	O	2/3 divider output of the pins 53 and 54. Does not change with vari-pitch.
57	C4M	O	4.2336 MHz output. When vari-pitch is performed, it changes too.
58	C16M	O	16.2336 MHz output. When vari-pitch is performed, it changes too.
59	MD2	I	Digital-out ON/OFF control. ON at H, OFF at L.
60	DOUT	O	Digital-out terminal.
61	EMPH	O	H output when the playback disc has emphasis. L output without emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	H output when S0 or S1 of the subcode sync is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	SubQ 8-bit and PCM peak level data. 16-bit output.
67	SQCK	I	Clock input for SQSO readout.
68	MUTE	I	Mute at H. Release at L.
69	SENS	O	SENS output. Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. Latches serial data at fall-down edge.
73	VDD	—	Power supply (+3.5 V).
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Sensor input from SSP.
76	CNIN	I	Track jump number counted signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latches at fall-down edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of 128 track or more at auto sequencer.

IC, µPD78044BGF

Pin No.	Pin Name	I/O	Description
1	DO ON	O	Digital output. ON/OFF output.
2~7	NC	—	Not used.
8	VDD	—	PWR. +5 V power supply.
9	CM CLK	I/O	Serial clock I/O.
10	C DATA	O	Serial data output.
11	M DATA	I	Serial data input.
12	O-CLK	O	DSP serial clock output.
13	O-XLT	O	DSP serial latch output.
14	O-SQCLK	O	DSP sub Q read-out clock output.
15	O-DATA	O	DSP serial data output.
16	I-SQDATA	I	DSP sub Q data input.
17	$\overline{\text{RESET}}$	I	System reset input.
18	I-SENS	I	DSP SENS input.
19	XRST	O	CD system reset output.
20	AVSS	—	PWR. GND potential of A/D converter input.
21	I-FOK	I	ASP FOK input.
22	I-GFS	I	DSP GFS input.
23	—	—	Connected GND.
24	I-ILSW	I	Pickup limit switch input.
25	I-OCSW	I	Tray OPEN/CLOSE switch input.
26~28	—	—	Connected GND.
29	AVDD	—	PWR. Analog power supply of A/D converter input.
30	AVREF	I	PWR. Reference voltage input of A/D converter input.
31	—	—	Connected GND.
32	NC	—	Open terminal.
33	VSS	—	PWR. GND potential.
34	X1	I	CLK. Terminal for 4.19 MHz clock oscillator.
35	X2	O	CLK. Terminal for 4.19 MHz clock oscillator.
36~38	NC	—	Not used.
39	$\overline{\text{C-BUSY}}$	O	MPEG status output.
40	MSTBY	I	Main microprocessor status input.
41	CLOCK	O	Main microprocessor serial clock output.
42	DATA	O	Main microprocessor serial data output.
43	D-REQ	O	Main microprocessor status output.
44	I-KEY	I	Main microprocessor serial data input.
45	SCOR	I	DSP SCOR input.
46	$\overline{\text{M-BUSY}}$	I	MPEG status signal input.
47	—	—	Connected GND.
48	IC	—	PWR. Connected to Vss.
49	MUTE L	O	L channel analog mute output.
50	MUTE R	O	R channel analog mute output.

Pin No.	Pin Name	I/O	Description
51	DSENS	I	Turntable sensor input.
52	VDD	—	PWR. +5 V power supply.
53~64	NC	—	Not used.
65	O-TOPN	O	Tray OPEN output.
66	O-CLS	O	Tray CLOSE output.
67	O-DFWD	O	Turntable forward rotation output.
68	O-DRVS	O	Turntable reverse rotation output.
69, 70	NC	—	Not used.
71	VLOAD	—	PWR. -27 V power supply for FL pull-down.
72~76	NC	—	Not used.
77	VCD	O	VIDEO CD selection output.
78	$\overline{\text{CD FUNC}}$	O	CD function selection output.
79	G-MUT	O	CDG mute output.
80	CD ON	O	FL. Digit output for FL display.

IC, LC7872E

Pin No.	Pin name	I/O	Description
1, 2	S1, S2	—	DSP select pin for CD. (Connected to VDD)
3	SBCK	O	Subcode read/write clock.
4	SFSY	I	Subcode frame sync signal.
5	PW	I	Subcode read/write data.
6	SBSY	I	Subcode block sync signal.
7	VDD1	—	Power supply for digital block. (Connected to +5V)
8	CE	I	Control pin when serial input or serial output. (Connected to GND)
9	DO	O	Serial data output. (Connected to GND)
10	DI	I	Serial data input. (Connected to GND)
11	CL	I	Clock when inputting/outputting serial data. (Connected to GND)
12	MUTE	I	Control signal disabling the subcode.
13	VSS1	—	GND for digital block.
14	$\overline{\text{WE}}$	O	DRAM control pin.
15	$\overline{\text{RAS}}$	O	DRAM control pin.
16~23	A0~A7	O	DRAM address pin.
24	DB0	I/O	DRAM data pin.
25	$\overline{\text{CAS}}$	O	DRAM control pin.
26	DB1	I/O	DRAM data pin.
27	$\overline{\text{DE}}$	O	DRAM control pin.
28	DB2	I/O	DRAM data pin.
29	DB3	I/O	DRAM data pin.
30	CE	I	"L": Normal mode "H": Color bar output (Not used)
31	CDGM	O	"H" output when CDG disk. (Not used)
32	TRANS0	O	Transparency digital output. (Not used)
33	TRANS1	O	Transparency digital output. (Not used)
34	TRANS2	O	Transparency digital output. (Not used)
35	TRANS3	O	Transparency digital output. (Not used)
36	TRANS4	O	Transparency digital output. (Not used)
37	TRANS5	O	Transparency digital output. (Not used)
38	VSS2	—	Composite video DAC GND pin.
39	VDD2	—	Composite video DAC power supply pin. (Connected to +5V)
40	BIAS	O	Capacitor connecting pin for eliminating ripple.
41	VIDEO	O	Composite video output pin (8-bit DAC output).
42	TEST	I	Test pin. Set to "L" normally. (Connected to GND)
43	LINE	I	When NP2 pin is "H": H: 263H L: 262H When NP2 pin is "L": H: 312H L: 314H (Not used)
44	FSCIN	I	Subcarrier clock input pin. (feedback resistor is built in) (Connected to GND)
45	VSYNC	O	Vertical sync signal output pin. (Not used)
46	TEST1	I	Test pin. Set to "L" normally. (Connected to GND)
47	YS	O	Superimpose control output. (Not used)
48	$\overline{\text{CSTNC}}$	O	Composite sync signal output. (Not used)

Pin No.	Pin name	I/O	Description
49	GND	—	GND.
50	EFLG	O	Error status monitor pin. (Not used)
51	FSX	O	For error status monitor trigger. (Not used)
52	DEN	I	Disk information display enable. H: BGC L: Enable (Connected to GND)
53	PALID	I	External control pin when superimposing with PAL (pull-up resistor is built in). (Not used)
54	VDD3	—	Digital power supply (+5V)
55	FSC	O	Subcarrier clock output. NTSC mode: 3.579545 MHz PAL mode: 4.433619 MHz (Not used)
56	VDD4	—	Digital power supply (+5V)
57	$\overline{\text{RESET}}$	I	Reset input pin.
58	N/$\overline{\text{P}}$1	I	NTSC/PAL selection pin. (RGB encoder) "H": NTSC "L": PAL
59	N/$\overline{\text{P}}$2	I	NTSC/PAL selection pin. (CD-G decoder) "H": NTSC "L": PAL
60	SON	I	Superimpose ON/OFF pin. (Connected to GND)
61	XIN2	I	Crystal oscillator 17.734476 MHz. (for PAL)
62	XOUT2	O	Crystal oscillator 17.734476 MHz. (for PAL)
63	XIN1	I	Crystal oscillator connection 14.31818 MHz. (for NTSC)
64	XOUT1	O	Crystal oscillator connection 14.31818 MHz. (for NTSC)

IC, CXA1782BQ

Pin No.	Pin name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	—	+ 5 V power supply pin.
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU .
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from CPU .
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin. (Eye pattern check point)
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.

Pin No.	Pin name	I/O	Description
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.
35~36	PHD1~2	I	RF I-V amplifier inverted input pin. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FE BIAS	I	Bias adjustment pin of the focus error amplifier.
38~39	F~E	I	F and E IV amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	—	Gain adjustment pin of the I-V amplifier E.
41	VEE	—	GND connection pin
42	TEO	O	Tracking error amplifier output pin. E-F signal is output.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC, CL480

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS		GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3		Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	RESERVED	—	Reserved.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	RESERVED	—	Reserved.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	RESERVED	—	Reserved.
121	-FMV_DET	O	FMV detection. L: FMV detected.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	RESERVED	—	Reserved.
125	VSS	—	GND.
126	RESERVED	—	Reserved.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, CXD1178Q

Pin No.	Pin Name	I/O	Description
1~8	R0~R7	I	Digital input.
9~16	G0~G7		
17~24	B0~B7		
25	BLK	I	Blanking pin. No signal at "H" (Output 0V). Output condition at "L".
26	$\overline{\text{CE}}$	I	Chip enable pin. No signal (Output 0V) at "H" and minimizes power consumption.
27	RCK	I	Clock pin. Moreover all input pins are TTL-CMOS compatible.
28	GCK		
29	BCK		
30, 31	DVSS	—	Digital GND.
32	VB	O	Connect a capacitor of about 0.1μF.
33	AVSS	—	Analog GND.
34	VREF	I	Set full scale output value.
35	IREF	I	Connect a resistance 16 times "16R" that of output resistance value "R".
36	$\overline{\text{RO}}$	O	Inverted current output pin. Normally dropped to analog GND.
37	RO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
38	$\overline{\text{GO}}$	O	Inverted current output pin. Normally dropped to analog GND.
39	GO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
40	$\overline{\text{BO}}$	O	Inverted current output pin. Normally dropped to analog GND.
41	BO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
42	VG	I	Connect a capacitor of about 0.1μF.
43~46	AVDD	—	Analog VDD.
47, 48	DVDD	—	Digital VDD.

IC, MC68HC705

Pin No.	Pin Name	I/O	Description
1	RST	I	Reset.
2	IRQ	I	MPEG DECODER request signal.
3	VPP	—	ROM write power.
4~11	PA7~PA0	I/O	MPEG DECODER data bus 7~0.
12~14	PB0~PB2	O	MPEG DECODER register select 0~2.
15	PB3	O	MPEG DECODER data R/W select.
16	PB4	O	MPEG DECODER data strobe.
17	PB5	I	MPEG DECODER data acknowledge.
18	PB6	I	CD-I bit stream detect.
19	PB7	I	CD DA/VCO select.
20	VSS	—	Power ground.
21	PC7	I	MPEG DECODER FIFO status.
22, 23	PC6, PC5	—	Not used.
24	PC4	O	MPEG DECODER reset signal.
25, 26	PC3, PC2	—	Not used.
27, 28	PC1, PC0	O	Key scan out 1, 0.
29	RDI	—	Not used.
30	TD$\overline{\text{O}}$		
31~34	PD2~PD5	I	Key scan input 0~3.
35	TCMP	O	Remote data out.
36	PD7	—	Not used.
37	CAP	I	Remote data in.
38, 39	OSC2, OSC1	I	X_tal in.
40	VDD	—	Power 5V.

IC, µPD6376

Pin No.	Pin Name	I/O	Description
1	FS-SEL	I	As this terminal is "Low" or open, L-ch data and R-ch data are inputted for serial data by the pin 15. As this terminal is "High", L-ch data is inputted by the pin 15, R-ch data is inputted by the pin 14. (Pull-downed by the 100 kΩ resistance in IC.)
2	D. GND	—	Ground terminal for the logic circuit.
3	NC	—	—
4	D. VDD	—	Power supply terminal for the logic circuit .
5	A. GND	—	Ground terminal for the analog circuit.
6	R. OUT	O	Output terminal for the right analog signal.
7, 8	A. VDD	—	Power supply terminal for the analog circuit.
9, 10	R. REF, L. REF	—	Operational Amplifier reference bias terminal. Normally connected to A.GND via a capacitor.
11	L. OUT	O	Output terminal for the left analog signal.
12	A. GND	—	Ground terminal for the analog circuit.
13	LRCK	I	As the pin 1 is "Low" or open, this is input terminal for left/right identification signal. As the pin 1 is "High", this is input terminal for word identification signal of input data.
14	LRSEL	I	As the pin 1 is "Low" or open, this is left/right selection terminal for LRCK signal. At "High" of LRCK signal, set LRSEL pin at "Low" for L-ch DATA input. At "Low" of LRCK signal, set LRSEL pin at "High" for L-ch DATA input. As the pin 1 is "High", this is input terminal for R-ch serial data.
15	DATA	I	As the pin 1 is "Low" or open, this is input terminal for L-ch and R-ch serial data. As the pin 1 is "High", this is input terminal for L-ch serial data.
16	BCK	I	Input terminal for read clock of serial input data.

IC, CXA1645M

Pin No.	Pin Name	I/O	Description
1	GND	—	GND.
2	RIN	I	Analog RGB input terminals.
3	GIN		
4	BIN		
5	NC	—	N. C.
6	SCIN	I	Subcarrier input terminal.
7	NPIN	I	NTSC, PAL mode select terminal. NTSC: Vcc, PAL: GND.
8	BFOUT	O	Output terminal to monitor the BF pulse. Unable to drive 75 Ω load.
9	YCLPC	—	External time constant for Y signal clamp is connected to this terminal.
10	SYNCIN	I	Composite sync signal input terminal. Input at TTL level. SYNC period at L (≦ 0.8 V). H (≧ 2.0 V).
11	NC	—	N. C.
12	VCC	—	Power supply terminal.
13	IREF		Terminal which determines internal reference current.
14	VREF	—	Internal reference voltage terminal.
15	COUT	O	Chroma signal output terminal.
16	YOUT	O	Y signal output terminal.
17	YTRAP	I	Terminal to reduce cross-color due to subcarrier frequency component included in the Y signal.
18	FO	I	fo adjustment terminal of internal filter. The following resistor is connected between GND depending upon NTSC or PAL mode. NTSC: 20 kΩ (±1%) PAL: 16 kΩ (±1%).
19	VCC	—	Power supply terminal.
20	CVOUT	O	Composite video signal output terminal.
21	BOUT	O	Analog RGB signal output terminal
22	GOUT		
23	ROUT		
24	GND	—	GND.

IC, HD6433042F06F

Pin No.	Pin Name	I/O	Description
1	VCC	I	Power supply.
2	CDG DIN	O	CD-G decoder serial data signal.
3	CDG XLT	O	CD-G decoder latch signal.
4	CDG CLK	O	CD-G decoder clock signal.
5~7	GADSP0~2	O	Gate array DSP format 0~2.
8	$\overline{\text{DRQ CDDEC}}$	I	CD-ROM decoder data request signal.
9	$\overline{\text{DRQ MPEG}}$	I	MPEG decoder data request signal.
10	$\overline{\text{RESO}}$	O	External reset output.
11	GND	I	GND.
12	TXD0	O	Serial interface (RXD).
13	TXD1	O	CXD for test.
14	RXD0	I	Serial interface (RXD).
15	RXD1	I	RXD for test.
16	SCK0	I/O	Serial interface (SCK).
17	$\overline{\text{MPRST}}$	O	Peripheral reset. L: RESET ON.
18~21	D0~D3	I/O	Data bus 0~3.
22	GND	I	GND.
23~34	D4~D15	I/O	Data bus 4~15.
35	VCC	I	Power supply.
36~43	A0~A7	O	Address bus 0~7.
44	GND	I	GND.
45~56	A8~A19	O	Address bus 8~19.
57	GND	I	GND.
58	$\overline{\text{WAIT}}$	I	External wait signal.
59	GLUE ON	O	DMA glue circuit enable 0: OFF. 1: ON.
60	M EMPH	O	MPEG AUDIO emphasis 0: OFF. 1: ON.
61	FAI	O	System clock output.
62	$\overline{\text{STBY}}$	I	Standby. (Hardware standby mode at low level).
63	$\overline{\text{RES}}$	I	Reset input. (Reset at low).
64	NMI	I	Non-maskable interrupt. (Non-maskable interrupt is requested).
65	GND	I	GND.
66	EXTAL	I	External crystal is connected to this pin.
67	XTAL	I	External crystal is connected to this pin.
68	VCC	I	Power supply.
69	$\overline{\text{AS}}$	O	Address strobe signal.
70	$\overline{\text{RD}}$	O	External address read enable signal.
71	$\overline{\text{HWR}}$	O	External address high write enable signal.
72	$\overline{\text{LWR}}$	O	External address low write enable signal.
73~75	MOD0~MOD2	I	Mode terminal. Operating mode is set using this terminal.
76	AVCC	I	Power supply terminal of A/D converter and D/A converter.
77	VREF	I	Reference voltage input to A/D converter and D/A converter.

Pin No.	Pin Name	I/O	Description
78, 79	P70, P71	I	IN port 0, 1 for test.
80	PAL/NTSC	I	PAL/NTSC status 0: NTSC. 1: PAL.
81	REQ CD	I	Serial interface (REQ_CD).
82~85	P74~P77	I	Reserve.
86	AGND	I	GND terminal of A/D converter and D/A converter.
87	INT CDDRV	I	Serial interface interrupt.
88	INT CDDEC	I	CD-ROM decoder interrupt.
89	INT MPEG	I	MPEG decoder interrupt.
90	IRQ3	I	Reserve.
91	P84	I	Reserve.
92	GND	I	GND.
93	DONE CDDEC	O	CD-ROM decoder DONE signal.
94	DONE MPEG	O	MPEG decoder DONE signal.
95	CDG VOFF	O	CD-G decoder video OFF signal. 1: VOFF.
96	SYS MUTE1	O	Audio mute 1 signal. 1: mute ON.
97	INTFLDO	I	EVEN/OFF input signal. 0: EVEN. 1: 0DD.
98	SW AUDIO	O	Audio select signal. 0: CD-G/DA. 1: MPEG.
99	SYS MUTE0	O	Audio mute 0 signal. 0: mute on.
100	REQ MPEG	O	Serial interface (REQ MPEG)

IC, μPD65622GF-239-3B9

Pin No.	Pin Name	I/O	Description
1	LRCKCD	O	Main data signal to CXD1186.
2	SDATACD	O	
3	BCKCD	O	
4	C2POCD	O	
5	$\overline{\text{CSROMH}}$	O	Chip select signal to CXD1186 (host side).
6	$\overline{\text{CSROMC}}$	O	Chip select signal to CXD1186 (CPU side).
7	$\overline{\text{DACKROM}}$	O	DMA acknowledge signal to CXD1186.
8	HDRQ	I	Data transfer request signal from CXD1186. This signal is active high.
9	$\overline{\text{ROMRD}}$	O	Read/write signal to CXD1186.
10	$\overline{\text{ROMWR}}$	O	Read/write signal to CXD1186.
11	EMPHI	I	This signal allows inputting the main data from the CD drive.
12	GND	—	GND.
13	SDATAI	I	This signal allows inputting the main data from the CD drive.
14	BCKI	I	
15	LRCKI	I	
16	C2POI	I	
17	GND	—	GND.
18	16.9M	I	16.9344 MHz oscillator circuit input signal.
19	16.9F	O	16.9344 MHz oscillator circuit output signal.
20	GND	—	GND.
21	GSFSY	I	Write frame clock signal used to input the sub data from CD drive.
22	EMPO	O	Main data signal to CXD1186.
23	LRCKO	O	Audio data signal to audio DAC.
24	SDATAO	O	Audio data signal to audio DAC.
25	RESET	O	Active high reset signal.
26	GND	—	GND.
27	BCKCO	O	Audio data signal to audio DAC.
28	$\overline{\text{GGLUE}}$	I	The input signal which makes the glue circuit valid from GSFSY input.
29	$\overline{\text{GGSFSY}}$	O	Not used.
30	SDATAMA	I	Audio data signal from μPD61010.
31	BCKMA	I	
32	LRCKMA	I	
33	GND	—	GND.
34	VCC	—	Vcc.
35	$\overline{\text{16.9M}}$	O	16.9344 MHz output signal.
36	GND	—	GND.
37	$\overline{\text{DS}}$	O	Control signal to μPD61010.
38	$\overline{\text{CSMPEG}}$	O	Chip select signal to CXD1186.
39	R/$\overline{\text{W}}$	O	Control signal to μPD61010.
40	INT	I	Interrupt request signal from μPD61010. This signal is active high.
41	$\overline{\text{HDAK}}$	I	Data acknowledge signal from μPD61010.

Pin No.	Pin Name	I/O	Description
42	$\overline{\text{DREQ}}$	I	DRAM data transfer request signal from μPD61010.
43	$\overline{\text{DACKMP}}$	O	DMA acknowledge signal to μPD61010.
44	$\overline{\text{DAK}}$	I	Bit stream data transfer request signal from μPD61010.
45	$\overline{\text{CSCELL}}$	O	Chip select signal to standard cell.
46	GND	—	GND.
47	$\overline{\text{RESET}}$	I	System reset signal.
48	GND	—	GND.
49	$\overline{\text{CSRAM}}$	O	Chip select signal to the system RAM.
50	$\overline{\text{LWR}}$	I	Lower data write signal from CPU.
51	$\overline{\text{HWR}}$	I	Upper data write signal from CPU.
52	$\overline{\text{RD}}$	I	Data read signal from CPU.
53	GND	—	GND.
54	$\overline{\text{AS}}$	I	Address strobe signal from CPU.
55	$\overline{\text{CSIO}}$	O	Optional chip select signal.
56~63	A19~A12	I	Address signal from CPU.
64	GND	—	GND.
65	$\overline{\text{WAIT}}$	O	Wait signal to CPU.
66	GLUEON	I	This signal makes the glue logic valid in order to prevent CPU DMAC from trouble. This circuit is made valid at high.
67	$\overline{\text{SEL12}}$	I	Input signal to select 12 MHz or 16 MHz CPU clock.
68	EMPMA	I	Audio data signal from μPD61010.
69	GND	—	GND.
70	FAI	I	Basic clock signal (12 MHz) from CPU.
71	GND	—	GND.
72	VCC	—	Vcc.
73	GND	—	GND.
74	$\overline{\text{INTMPEG}}$	O	Interrupt request signal to CXD1186.
75	SWAUDIO	I	Selection signal between MPEG audio and CD-DA audio signals.
76	$\overline{\text{DRQI}}$	O	DMA transfer request signal to μPD61010.
77	$\overline{\text{DRQO}}$	O	DMA transfer request signal to CXD1186.
78~80	GADSP2~0	I	Format select signal to convert format of the main data from CD drive.

IC, CXD1186CR

Pin No.	Pin Name	I/O	Description
1~4	A0~A3	I	CPU address signal.
5	HMDS	I	Host mode select signal.
6, 7	HA0, HA1	I	Host address signal.
8	XHCS	I	Chip select negative logic signal from the host.
9	HINT	O	Interrupt request negative logic signal to the host.
10	GND	—	GND.
11	XHRD	I/O	Data read strobe signal from the host or to the SCSI control IC.
12	XHWR	I/O	Data write strobe signal from the host or to the SCSI control IC.
13~20	HDB0~HDB7	I/O	Host data bus.
21	GND	—	GND.
22	HDBP	I/O	Error flag. Host data bus.
23	XRST	I	Reset negative logic signal.
24	HDRQ	O	Data request positive logic signal to the host. Or DMA acknowledge negative logic signal to the SCSI control IC.
25	XHAC	I	DMA acknowledge negative logic signal from the host Or data request positive logic signal from the SCSI control.
26	XTC	I	Terminal count negative logic signal.
27	ADRQ	I	DMA request positive logic signal from ADP.
28	XAAC	O	DMA acknowledge negative logic signal to ADP.
29, 30	BA0, BA1	O	Buffer memory address.
31	VDD	—	Power supply (+5 V) terminal.
32~39	BA2~BA9	O	Buffer memory address.
40	GND	—	GND.
41~46	BA10~BA15	O	Buffer memory address.
47	XMOE	O	Buffer memory output enable negative logic signal.
48	XMWR	O	Buffer memory write negative logic signal.
49	BDB0	I/O	Buffer memory data bus.
50	GND	—	GND.
51~57	BDB1~BDB7	I/O	Buffer memory data bus.
58	BDBP	I/O	Buffer memory pointer data bus.
59	XTL2	O	X'TAL oscillator circuit output terminal.
60	XTL1	I	X'TAL oscillator input terminal.
61	GND	—	GND.
62	HCLK	O	X'TAL 1 divided-by-2 clock signal.
63	LRCK	I	LR clock from CD player.
64	DATA	I	Serial data from CD player.
65	BCLK	I	Bit clock from CD player.
66	C2P0	I	C2 pointer from CD player.
67~70	DB0~DB3	I/O	CPU data bus.
71	VDD	—	Power supply (+5 V) terminal.
72~75	DB4~DB7	I/O	CPU data bus.

Pin No.	Pin Name	I/O	Description
76	XCS	I	Chip select negative logic signal from CPU.
77	XRD	I	IC internal register read-out strobe negative logic signal from CPU.
78	XWR	I	IC internal register write strobe negative logic signal from CPU.
79	INT	O	Interrupt request signal to CPU.
80	GND	—	GND.

IC, TLC29321PW

Pin No.	Pin Name	I/O	Description
1	VDD	—	Power supply terminal to the internal logic circuit.
2	VCO LS	I	VCO output frequency divide-by-2 divider select terminal. The VCO output frequency can be divided by 2 and output as this terminal is controlled by external logic.
3	VCOO	O	VCO output terminal. Goes to low level during inhibit.
4, 5	FIN-A, FIN-B	I	2 input terminal for edge difference detection between the reference frequency (fREF-IN) and the frequency from external counter. The fREF-IN is input to the FIN-A terminal normally, and the divided or multiplied frequency from external counter is input to the FIN-B terminal.
6	PFDO	O	PFD output terminal.
7	GND	—	Internal logic circuit GND terminal.
8	NC	—	N.C.
9	PFDIH	I	PFD inhibit function control terminal.
10	VCOIH	I	VCO inhibit function control terminal.
11	A GND	—	VCO GND.
12	VCOI	I	VCO control voltage input. The VCO oscillator control voltage is input from an external low-pass filter to form PLL.
13	RBIAS	I	External resistor is connected to this terminal for setting the VCO oscillation frequency. A bias resistor is connected between this terminal and power supply line to supply bias for internal VCO oscillation and for setting and adjusting the oscillating frequency.
14	A VDD	—	VCO power supply voltage terminal.

IC, HD49307

Pin No.	Pin No.	I/O	Description
1~5	G4~G8	I	Digital input terminal.
6	B1	—	N. C.
7	NC	I	Digital input terminal.
8~12	B2~B6	I	Digital input terminal.
13~15	NC	—	N. C.
16, 17	B7, B8	I	Digital input terminal.
18	NC	—	N. C.
19	RCLK	I	R channel clock input.
20	GCLK	I	G channel clock input.
21	BCLK	I	B channel clock input.
22	DVSS	—	Digital GND.
23	DVDD	—	Digital power supply.
24	NC	—	N. C.
25	CBU	—	External phase compensation capacitance connection terminal.
26	CBL	—	Bypass capacitance connection terminal.
27~29	NC	—	N. C.
30	VRREF	I	Reference voltage input terminal.
31	AVSS	—	Analog GND.
32	AVDD	—	Analog power supply.
33	BOUT	O	B channel analog signal output terminal.
34	AVDD	—	Analog power supply.
35	NC	—	N. C.
36	GOUT	O	G channel analog signal output terminal.
37	AVDD	—	Analog power supply.
38	ROUT	O	R channel analog signal output terminal.
39	AVSS	—	Analog GND.
40	AVDD	—	Analog power supply.
41	DVDD	—	Digital power supply.
42	R1	I	Digital input terminal.
43~44	NC	—	N. C.
45~51	R2~R8	I	Digital input terminal.
52~54	G1~G3	I	Digital input terminal.
55, 56	NC	—	N. C.

IC, µPD61010

Pin No.	Pin Name	I/O	Description
1	VDD	—	+5 V power supply.
2~6	HD9~5	I/O	Host data bus.
7	VDD	—	+5 V power supply.
8	GND	—	GND.
9~13	HD4~0	I/O	Host data bus.
14	VDD	—	+5 V power supply.
15	GND	—	GND.
16	$\overline{\text{DREQ}}$	O	DMA request signal.
17	$\overline{\text{DACK}}$	I	DMA acknowledge signal.
18	HSEL	I	Signal to select the host CPU access method.
19	DRQ	I	Data input request for bit stream input from CD-ROM decoder.
20	VDD	—	+5 V power supply.
21	GND	—	GND.
22	$\overline{\text{DAK}}$	O	Data input response for bit stream input from CD-ROM decoder, or DMA input request for code input.
23	$\overline{\text{DRD}}$	O	Bit stream input approval signal.
24, 25	NC	—	N. C.
26~33	CD0~7	I	Data bus for bit stream input from CD-ROM decoder.
34	VDD	—	+5 V power supply.
35	GND	—	GND.
36~39	MD7~4	I/O	DRAM data bus.
40	VDD	—	+5 V power supply.
41, 42	GND	—	GND.
43~46	MD3~0	I/O	DRAM data bus.
47, 48	MD15, 14	I/O	DRAM data bus.
49	VDD	—	+5 V power supply.
50	GND	—	GND.
51~56	MD13~8	I/O	DRAM data bus.
57	VDD	—	+5 V power supply.
58	GND	—	GND.
59~64	MA0~5	O	DRAM address bus.
65	VDD	—	+5 V power supply.
66	GND	—	GND.
67~69	MA6~8	O	DRAM address bus.
70	$\overline{\text{RAS 1}}$	O	DRAM RAS signal.
71	$\overline{\text{RAS 0}}$	O	DRAM RAS signal.
72	$\overline{\text{CAS}}$	O	DRAM CAS signal.
73	VDD	—	+5 V power supply.
74	$\overline{\text{WE}}$	O	Write enable to DRAM.
75~77	NC	—	N. C.
78	VOE	I	Video data output enable.

Pin No.	Pin Name	I/O	Description
79, 80	GND	—	GND.
81	VDD	—	+5 V power supply.
82	NC	—	N. C.
83	FLDI	I	Field signal (odd/even)
84	HDI	I	Horizontal sync signal.
85	VDI	I	Vertical sync signal.
86	VDCLK	I	Video data output clock (13.5 MHz).
87	VDD	—	+5 V power supply.
88～91	VDATA23～20	O	Video data output bus.
92	GND	—	GND.
93	VDD	—	+5 V power supply.
94～97	VDATA19～16	O	Video data output bus.
98, 99	VDATA15, 14	O	Video data output bus.
100	VDD	—	+5 V power supply.
101	GND	—	GND.
102～105	VDATA13～10	O	Video data output bus.
106	VDD	—	+5 V power supply.
107	GND	—	GND.
108～112	VDATA9～5	O	Video data output bus.
113	VDD	—	+5 V power supply.
114	GND	—	GND.
115～119	VDATA4～0	O	Video data output bus.
120	VDD	—	+5 V power supply.
121, 122	GND	—	GND.
123	DO	O	Video data output bus.
124	BCK	O	Video data output clock.
125	LRCK	O	L/R channel identification signal.
126	MCLK	O	Audio master clock.
127	NC	—	N. C.
128	AUCLK	I	Internal audio decoder system clock.
129	VDD	—	+5 V power supply.
130～132	NC	—	N. C.
133	VDD	—	+5 V power supply.
134	$\overline{\text{RESET}}$	I	Reset signal.
135	CLK	I	System clock (27 MHz)
136	GND	—	GND.
137	$\overline{\text{DS}}$	I	Data strobe signal.
138	R/$\overline{\text{W}}$	I	Read/write select.
139	$\overline{\text{CS}}$	I	Chip select.
140～145	HADR0～5	I	Host address bus.
146, 147	GND	—	GND.

Pin No.	Pin Name	I/O	Description
148	INT	O	Interrupt signal.
149	$\overline{\text{HDAK}}$	O	Bus cycle response signal.
150	VDD	—	+5 V power supply.
151	GND	—	GND.
152~157	HD15~10	I/O	Host data bus.
158	VDD	—	+5 V power supply.
159, 160	GND	—	GND.

IC, µPD63210GT

Pin No.	Pin Name	I/O	Description
1	TSEL	I	Test selection input.
2	RST	I	Reset input.
3	XTO	O	External crystal oscillator is connected to this pin.
4	XTI	I	External crystal oscillator is connected to this pin.
5	MCKO	O	Master clock output.
6	CKSEL	I	Clock selection input.
7	CLK	I	Bit clock input.
8	SI	I	Data input.
9	LRCK	I	LR clock input.
10	DEFS1	I	Deemphasis selection input 1.
11	DEFS2	I	Deemphasis selection input 2.
12	DSEL	I	Double speed playback selection input..
13	SMUTE	I	Soft mute selection input.
14	BSEL	I	Data bit length selection input.
15	DGND	—	Digital GND.
16	AGND	—	Analog GND.
17	RO	O	D/A converter output (R channel).
18	AOR	O	Filter amplifier output (R channel).
19	ANIR	I	Filter amplifier (-) input (R channel).
20	APIR	I	Filter amplifier (+) input (R channel).
21	RREF	—	Reference (R channel).
22	LREF	—	Reference (L channel).
23	APIL	I	Filter amplifier (+) input (L channel).
24	ANIL	I	Filter amplifier (-) input (L channel).
25	AOL	O	Filter amplifier output (L channel).
26	LO	O	D/A converter output (L channel).
27	AVDD	—	Analog power supply.
28	DVDD	—	Digital power supply.

IC, TC170C100AF

Pin No.	Pin Name	I/O	Description
1~5	YIN4~0	I	Y signal from MPEG chip.
6	GND	—	GND.
7~14	UIN7~0	I	U signal from MPEG chip.
15	GND	—	GND.
16, 17	VIN7, 6	I	V signal from MPEG chip.
18	VCC	—	Power supply terminal.
19~24	VIN5~0	I	V signal from MPEG chip.
25	GND	—	GND.
26	FLDO	O	Odd/even signal output of a field.
27	$\overline{\text{HDO}}$	O	$\overline{\text{HSYNC}}$ signal to MPEG chip.
28	$\overline{\text{VDO}}$	O	$\overline{\text{VSYNC}}$ signal to MPEG chip.
29	PCP	O	Clamp signal output.
30	CBLK	O	Blanking signal output (used depending upon type of DAC).
31	GND	—	GND.
32	FSC	O	Sub carrier output (Divided-by-four of NTSC: 14.31818 MHz. PAL: 17.734475 MHz).
33	CDG/$\overline{\text{MPEG}}$	O	CD-G or MPEG play selector signal to external RGB video selector.
34	TEST0	I	Operation mode setting terminal.
35	GND	—	GND.
36	13.5M	O	13.5 MHz output.
37	GND	—	GND.
38~43	R OUT7~2	O	Y/R signal output (Output format can be selectable in Y/R).
44	GND	—	GND.
45, 46	R OUT1, 0	O	Y/R signal output (Output format can be selectable in Y/R).
47~54	G OUT7~0	O	U/G signal output (Output format can be selectable in U/G).
55	VCC	—	Power supply terminal.
56~63	B OUT7~0	O	V/B signal output (Output format can be selectable in V/B).
64	GND	—	GND.
65	27M	I	27 MHz input.
66	TEST1	I	Operation mode setting terminal.
67	SHSYNC	O	Comparison clock for PLL synchronizing CLK.
68	MHSYNC	O	Reference clock for PLL synchronizing CLK.
69	VCC	—	Power supply terminal.
70	OSC1	I	14.31818 MHz input port (crystal oscillation) when supporting NTSC.
71	OSC2	O	NTSC: 14.31818 MHz crystal oscillation output terminal.
72, 73	GND	—	GND.
74	OSC3	I	17.734475 MHz input port (crystal oscillation) when supporting PAL.
75	OSC4	O	17.734475 MHz crystal oscillation output terminal.
76	VCC	—	Power supply terminal.
77, 78	TEST2, 3	I	Operation mode setting terminal.
79	FMOD	I	FLD0 output HL inversion selection signal.
80	PMOD	I	PCP output HL inversion selection signal.

Pin No.	Pin Name	I/O	Description
81	GND	—	GND.
82~85	T15~T12	I	RAM data input terminals 15 - 12 during RAM check.
86	T11OP3	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
87	T10OP2	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
88	T9OP1	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
89	T8OP0	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
90	VCC	—	Power supply terminal.
91	$\overline{\text{GHSYNC}}$	I	$\overline{\text{HSYNC}}$ signal from CD-G decoder.
92	$\overline{\text{GVSYNC}}$	I	$\overline{\text{VSYNC}}$ signal from CD-G decoder.
93	$\overline{\text{GCSYNC}}$	I	$\overline{\text{CSYNC}}$ signal from CD-G decoder.
94	GND	—	GND.
95~98	T7~4	I	RAM data input terminals 7 - 4 during RAM check.
99	T3IP3	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
100	T2IP2	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
101	T1IP1	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
102	T0IP0	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
103	GND	—	GND.
104	4FSC	O	104 NTSC: 14.31818 MHz. PAL: 17.734475 MHz buffer output.
105	GND	—	GND.
106	RAMCE	I	Chip enable signal for checking internal RAM and ROM check. (Fixed to low normally).
107	RAMW	I	Read/write signal for checking internal RAM and ROM check. (Fixed to low normally).
108	XT2C	I	XT2C input (used for HYNC DL delay).
109	GND	—	GND.
110	$\overline{\text{RST}}$	I	Input port of the reset signal.
111	GND	—	GND.
112	PAL/$\overline{\text{NTSC}}$	I	PAL/NTSC selector port.
113	HSYNCIN	O	Inverted output of $\overline{\text{HYNSC}}$ IN.
114	$\overline{\text{HSYNCIN}}$	I	$\overline{\text{SYNC}}$ signal from VST (only when supporting FMV engine).
115	$\overline{\text{VSYNCIN}}$	I	$\overline{\text{VSYNC}}$ from VSC. (only when supporting FMV engine).
116	GND	—	GND.
117~124	D7~0	I/O	CPU data bus signal.

Pin No.	Pin Name	I/O	Description
125	VCC	—	Power supply terminal.
126	CMOD	I	CLBK output HL inversion selection signal.
127	$\overline{\text{VOD}}$	I	Video output disable.
128	VCD/$\overline{\text{FMV}}$	I	VIDEO CD/DMV engine selection port.
129	$\overline{\text{CS}}$	I	Chip select signal.
130	$\overline{\text{RD/LDS}}$	I	READ signal from CPU $\overline{\text{RD}}$ (when supporting H8). $\overline{\text{LD}}$ (when supporting 680009).
131	$\overline{\text{WR/R/W}}$	I	$\overline{\text{WRITE}}$ signal from CPU $\overline{\text{WR}}$ (when supporting H8). R/W (when supporting 680009).
132~134	A2~0	I	Address signal from CPU.
135	H8/$\overline{\text{68}}$	I	CPU H8-325/68000 selection port.
136	GND	—	GND.
137	$\overline{\text{HSYNCO}}$	O	Horizontal sync output.
138	$\overline{\text{VSYNCO}}$	O	Vertical sync output.
139	$\overline{\text{CSYNCO}}$	O	Composite sync output. $\overline{\text{CSYNC}}$ signal from video encoder.
140	SMOD	I	13.5 MHz ↑ ↓ selection of SYNC signal output. Selection is possible at the final stage of $\overline{\text{HDO}}$, $\overline{\text{VDO}}$, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$, SHYNC, PCP, CBLK, FLDO. (However, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$ are supported during SYNC output of the CD-G decoder.)
141	VCC	—	Power supply terminal.
142~144	YIN7~5	I	Y signal from MPEG chip.

IC, MB89627

Pin No.	Pin Name	I/O	Description
1	CCLK	O	SSP, DSP Control Clock.
2	DATA	O	SSP, DSP Control Data.
3	SENS	I	SSP, DSP Status.
4	XLAT	O	SSP, DSP Command Latch.
5	XRST	O	SSP, DSP Reset.
6	TVMSW	O	OFF/NTSC/PAL/PAL60/PAL AUTO/AUTO/TEST. *NOTE
7	DMUTE	O	Digital Mute.
8	AMUTE	O	Analog Mute.
9	LDON	O	Servo PCB Power on.
10	VCDRST	O	Video CD Reset.
11	OPTON	O	Optical Digital Output ON.
12	VCC	—	A/D Converter VCC.
13	VCC	—	A/D Converter VREF.
14	VSS	—	A/D Converter VSS.
15	HOSTIRQ	I	Host CPU Interrupt Request.
16	SCOR	I	Subcode Sync 0. (Subcode IRQ)
17	ILSW	I	Inter Limit Switch.
18	VCDIRQ	I	Video CD Decoder Interrupt Request.
19	N. C.	I	Not used.
20	RST	I	CPU Reset.
21	MODE0	I	CPU MODE. (Pull-down)
22	MODE1	I	CPU MODE. (Pull-down)
23	CLKIN	O	8MHz System Clock.
24	CLKOUT	I	8MHz System Clock.
25	VSS	—	GND.
26	ALE	O	Address Latch Strobe.
27	RD	O	Data Read Strobe.
28	WR	O	Data Write Strobe.
29	CLK	O	Clock out.
30	READY	I	Video CD Decoder Ready.
31	OSDCS	O	OSDC Enable.
32	OSDCLK	O	OSDC Data Clock.
33	OSDSIN	O	OSDC Data.
34~41	A8~A15	O	Address Bus 8~15.
42~49	AD0~AD7	I/O	Address/Data Bus 0~7.
50	VSS	—	GND.
51	VCD/CDG	O	Video CD/CDG Switch.
52	HCLK	I	Host CPU Control Clock.
53	ST	O	Host CPU Control Send Data.
54	RT	I	Host CPU Control Receive Data.
55	TRACK	I	Travase Counter.

Pin No.	Pin Name	I/O	Description
56	ENCRST	O	Video Encoder Reset.
57	DVCC	—	DVCC.
58	PAL/PAL60	O	PAL/PAL60 Switch.
59	XNTSC	O	PAL/NTSC Switch.
60	SQCK	O	Subcode Q Read Clock.
61	SQSO	I	Subcode Q Serial Data.
62	BUSY	I/O	Host CPU I/F Busy Signal.
63	FOK	I	Focus Servo OK Detect.
64	GFS	I	Frame Sync Detect.

Note

- Analog input (TVMSW: 6 pin) of the microprocessor is divided into 7, then controlled.
- The output are the command setting (Set Video Format) to the two ports of PAL/PAL60 (58 pin), XNTSC (59 pin) and IC301 (CL484).

TVMSW (6 pins)		DISC encoding system	TV output mode	PAL/PAL60 (58 pins)	XNTSC (59 pins)	Set Video Format
Volt (V)	Mode					
5.00	OFF	—	Not used (NTSC output mode).			
4.58	NTSC	—	NTSC	H	L	NTSC
3.75	PAL	—	PAL	H	H	PAL
2.92	PAL60	—	PAL60	L	H	NTSC
2.08	PAL AUTO	NTSC	PAL60	L	H	NTSC
		PAL	PAL	H	H	PAL
1.25	AUTO	NTSC	NTSC	H	L	NTSC
		PAL	PAL	H	H	PAL
0.42	TEST	—	For servo circuit adjustment (NTSC output mode).			
0.00						

*1 As to identification of the disc encoding system, it is identified from the V_SIZE (1A1h/word) of the MPEG data.

*2 "For servo circuit adjustment" is the process during adjustment (when variable resistor is operated by service engineer) that the microprocessor enters the emergency process routine if the servo system goes extremely out of the servo range.

*3 In addition to the above, ENCRST (56 pin) is the reset signal for TV encoder, issues the active "L" pulse when each of the input port of CDGSW, NTB, CVSY, HSY, PIXCLK, GCLK, PAL60B and VCLK of IC401 (BU1417AK) has changed as follows:

① When the power is supplied to the circuit boards of the CD block,

② When starting to reach TOC.

③ The modes have changed as follows:

- TVMSW is switched.
- Switching of encoding system owing to exchange of video CD disc
- Exchange of video CD disc with the CD-DA or CD-G.

IC, CL484

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data'latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS	—	GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3	—	Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	CDG-S0S1	I	Block start sync.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	CDG-VFSY	I	Frame start or composite sync.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	CDG-SDATA	I	Subcode data.
121	CDG-SCLK	I/O	Subcode data clock.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	FSC1	O	Output generated by dividing-by-4 the pin-126 input CLK.
125	VSS	—	GND.
126	FSC4	I	Frequency divider input.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, BU1417AK

Pin No.	Pin Name	I/O	Description
1	BOSD	I	OSD Blue Data input.
2	GD0	I	Green Data Bit 0. (LSB)
3~8	GD1~GD6	I	Green Data Bit 1~6.
9	GND	—	Digital ground.
10	GD7	I	Green Data Bit 7. (MSB)
11	BD0	I	Blue Data Bit 0. (LSB)
12~14	BD1~BD3	I	Blue Data Bit 1~3.
15	OSDSW	I	OSD input enable.
16	CDGSWB	I	Select Video-CD/CD-G.
17~19	BD4~BD6	I	Blue Data Bit 4~6.
20	BD7	I	Blue Data Bit 7. (MSB)
21	GND	—	Digital ground.
22	NTB	I	Select NTSC/PAL mode.
23, 24	IM0, IM1	I	Input mode set Bit 0, 1.
25, 26	TEST1, TEST2	I	Normally pulldown to GND.
27	CVSY	I	C-SYNC or V-SYNC input.
28	HSY	I	H-SYNC input.
29	PIXCLK	O	1/2 Freq. of internal CL.
30	BLKB	I	Data blanking ENABLE.
31	VDD	—	Digital VDD.
32	INT	I	INTERLACE/NON-INTERLACE.
33	SLABEB	I	Set mode MASTER/SLABE.
34	ADDH	I	ADD One_line at Non-inter.
35	VREF	I	Reference voltage. (1.29V)
36	CGND	—	Chroma output ground.
37	COUT	O	Chroma output.
38	VGND	—	Composite output ground.
39	VOUT	O	Composite output.
40	AVSS	—	Analog (DAC, VREF) ground.
41	NC	—	Not used.
42	IR	I	Reference resistor. (1.2K)
43	AVDD	—	Analog (DAC, REF) VDD.
44	YGND	—	Luminance output ground.
45	YOUT	O	Luminance output.
46	G4FSC	I	Pulldown to GND.
47	GCLK	I	Video clock input for CD-G.
48	YCOFF	I	DAC (YOUT, COUT) off.
49	YFILON	I	Pulldown to GND.
50	PAL60B	I	PAL60 ON at NTB=HIGH.
51	VCLK	I	Video clock input for VCD.
52	RSTB	I	Logic part initial reset.

Pin No.	Pin Name	I/O	Description
53	CLKSW	I	Divide input CLK $\overline{\text{ENABLE}}$.
54	RD0	I	Red data Bit 0. (LSB)
55, 56	RD1, RD2	I	Red data Bit 1, 2.
57	ROSD	I	OSD Red data input.
58~60	RD3~RD5	I	Red data Bit 3~5.
61	VDD	—	Digital VDD.
62	RD6, RD7	I	Red data Bit 6, 7.
63	GOSD	I	OSD green data input.

IC, BU2173AF

Pin No.	Pin Name	I/O	Description
1	VDD	—	Digital VDD.
2	TSTO	O	Open during normal mode. (Used in test mode.)
3	XTALI	I	Reference oscillator input.
4	XTALO	O	Reference oscillator output.
5	CTRLA	I	CD-G/VCD clock selector terminal.
6	CTRLB	I	Fixed to "H" during normal mode.
7	CTRLC	I	CD-G PAL/NTSC clock selector terminal.
8	TSTI	I	Connected to Vss during normal mode. (Used in test mode.)
9	VSS	—	Digital GND.
10	AVSS	—	Analog GND.
11	FOUT3	O	Not used. Open during normal mode.
12	VSSIO	—	I/O GND.
13	FOUT2	O	Clock output (2).
14	TEST	—	Test mode setting. Connected to Vss during normal mode.
15	FOUT1	O	Clock output (1).
16	VDDIO	—	I/O VDD.
17	FOUT4	O	Clock output (4).
18	AVDD	—	Analog VDD.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button) • Press the power switch button. • Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

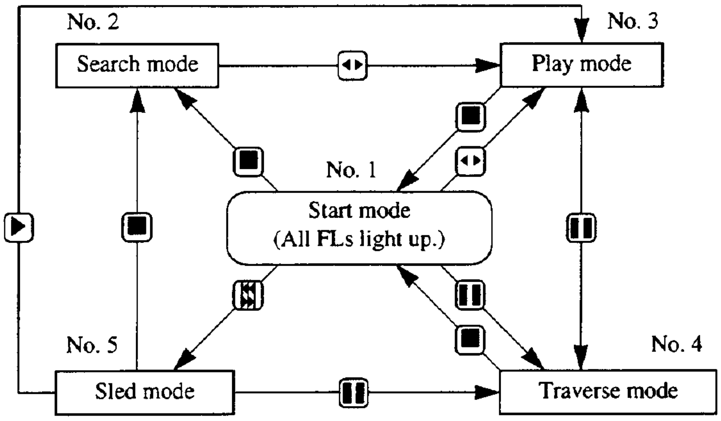
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key	CD--	• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

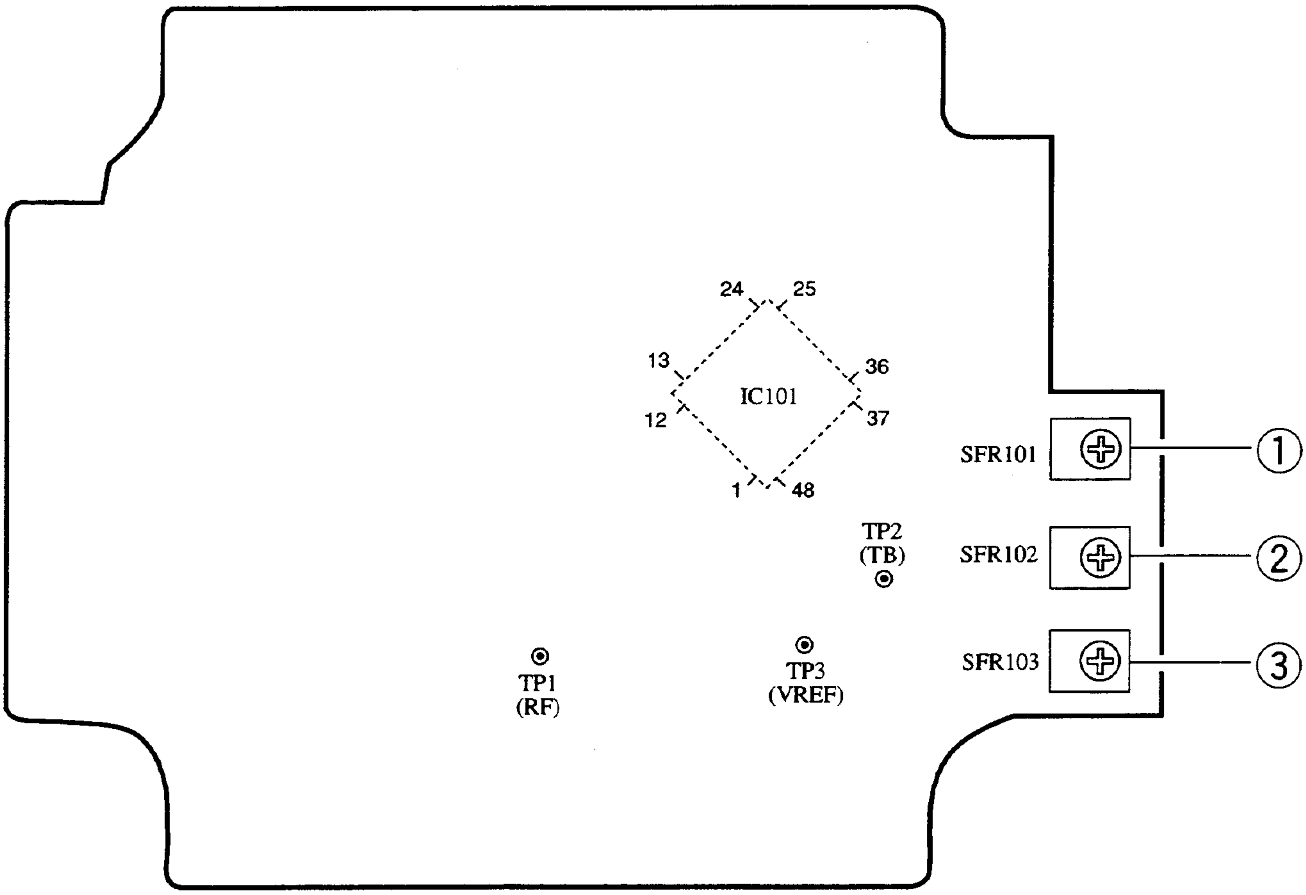
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

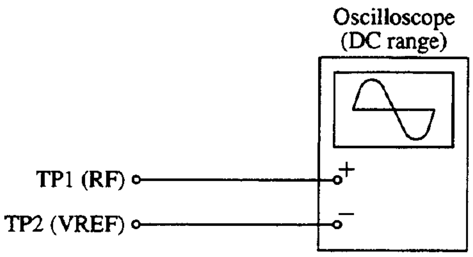
B CD MECHA C.B


24
25
13
36
IC101
12
37
1
48
TP2
(TB)
TP1
(RF)
TP3
(VREF)
SFR101
SFR102
SFR103
①
②
③

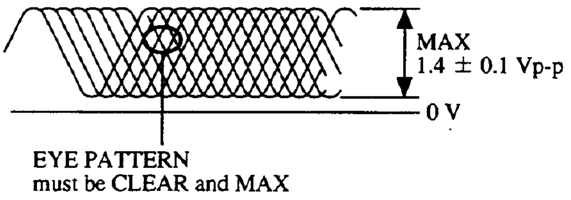
Note: Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

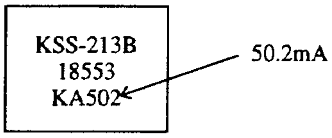


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR101 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



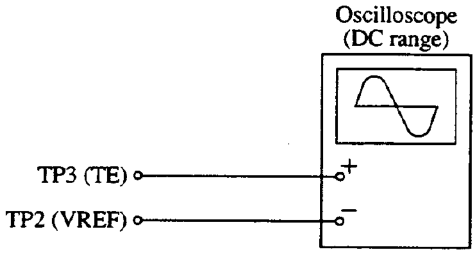
VOLT/DIV : 50mV
TIME/DIV : 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R127 (10Ω). The difference for the specified value shown on the lavel must be within ± 6.0mA.

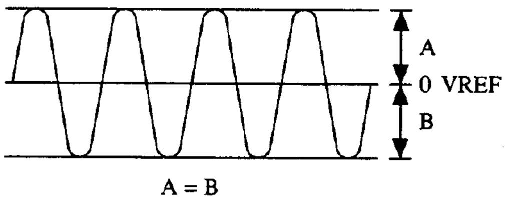


$$\text{Laser current Iop} = \frac{\text{Voltage across R127}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR103 to decrease the tracking gain.
5) Adjust SFR102 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



VOLT/DIV : 20mV
TIME/DIV : 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is off, the symptoms below appear.

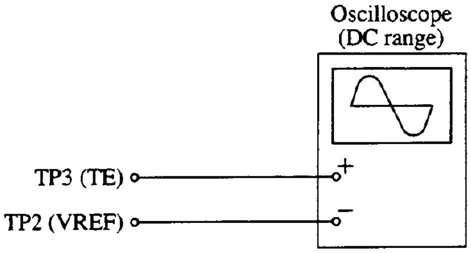
Gain / Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP→▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	—	low
● Disc stops to rotate shortly after STOP→▶PLAY.	low or high	—
● Sound is interrupted during PLAY. Or time counter display stops.	—	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

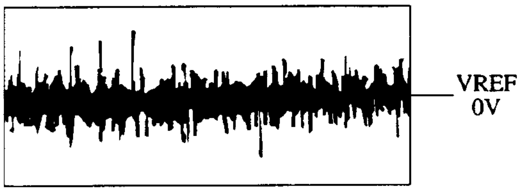
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD MECHA C.B.
4) Adjust SFR103 so that the waveform appears as shown in the figure below. (tracking gain adjustment)

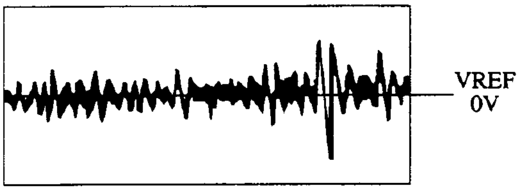


VOLT/DIV: 50 mV
TIME/DIV: 1mS

- Incorrect example

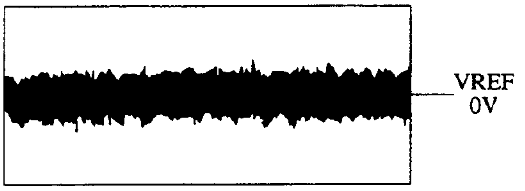
Low tracking gain

The fundamental wave appears as compared with the waveform adjusted.



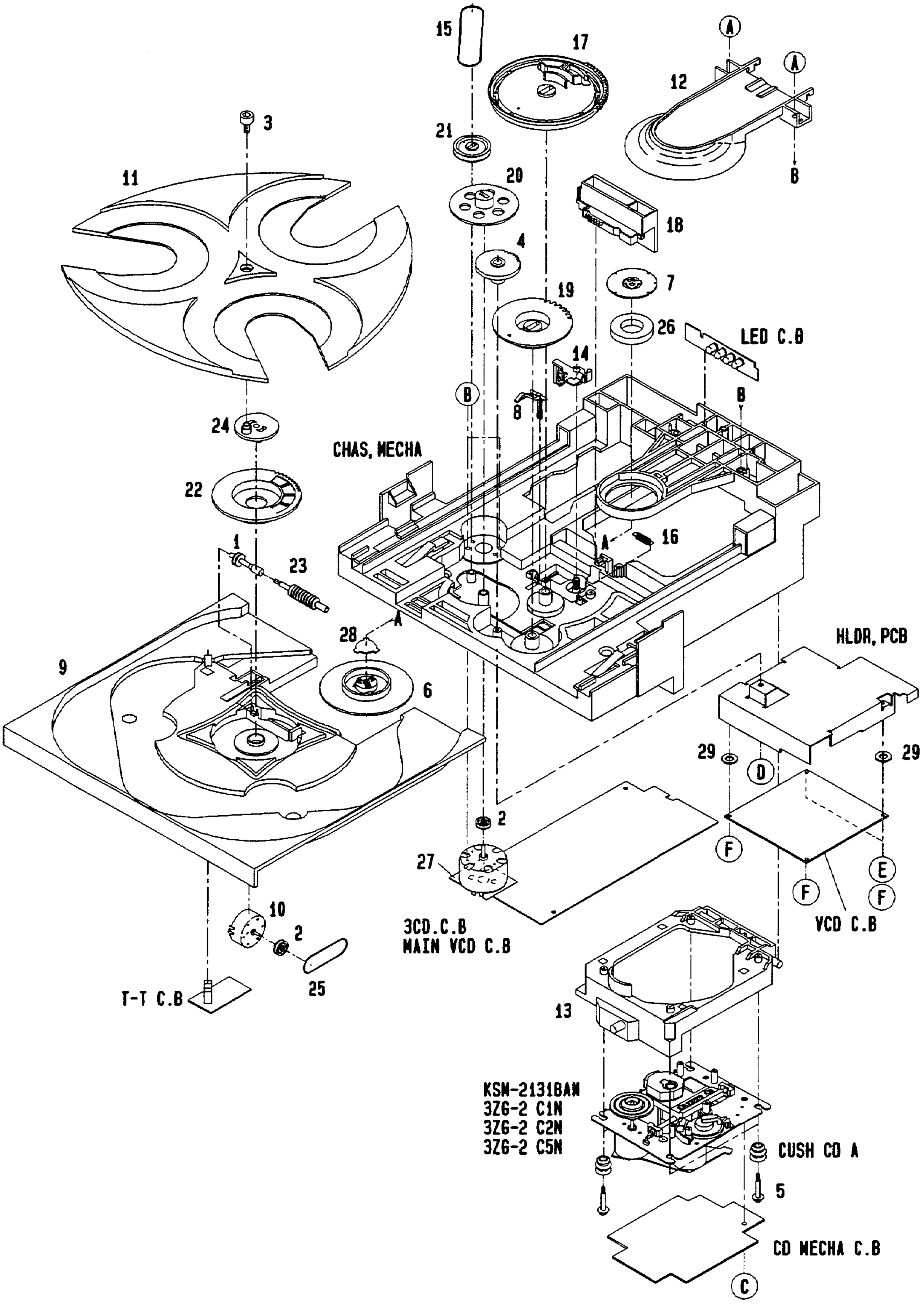
VOLT/DIV: 50 mV
TIME/DIV: 1mS

High tracking gain
The frequency of the fundamental wave is higher than that in low gain.



VOLT/DIV: 50 mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1 ／ 1

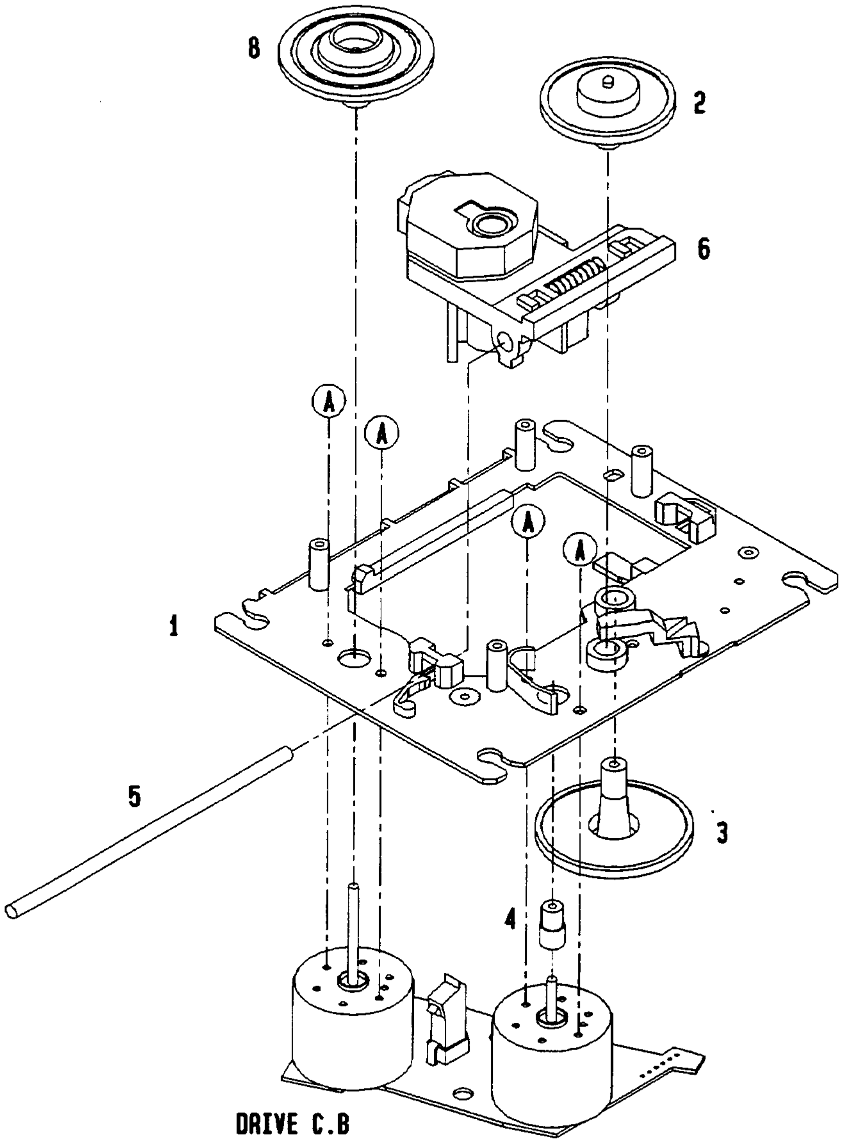

15
17
A
A
12
B
3
21
11
20
18
4
7
19
26
LED C.B
14
B
8
B
24
CHAS, MECHA
22
A
16
1
23
28
A
HLDR, PCB
9
6
29
D
29
2
F
E
27
F
F
10
3CD.C.B
MAIN VCD C.B
VCD C.B
2
25
T-T C.B
13
KSM-2131BAN
3Z6-2 C1N
3Z6-2 C2N
3Z6-2 C5N
CUSH CD A
5
CD MECHA C.B
C

MECHANICAL PARTS LIST 1 ／ 1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	84-ZG1-239-11K		PULLY,WORM N
2	81-ZG1-212-01K		PULLY,LOAD MO
3	81-ZG1-239-019		S-SCREW,TT
4	81-ZG1-291-019		GEAR,TRAY RELAY NO3
5	81-ZG1-271-019		S-SCREW,MECH REAR
6	81-ZG1-277-219		HLDR,MAGNET N
7	81-ZG1-255-119		PLATE,MAGNET MK2
8	83-ZG3-213-019		LVR,SW
9	84-ZG1-003-219		TRAY,NO2-B
10	87-045-364-019		MOTOR,(BCH3B14)
11	84-ZG1-005-119		TURNTABLE,NO1
12	84-ZG1-010-019		IND,CD N<V3L,V4L>
12	84-ZG1-011-019		REFLECTOR,CD<A,B,Z,V5>
13	84-ZG1-212-119		HLDR,MECHA NO2
14	84-ZG1-208-019		LEVER,CAM
15	84-ZG1-209-010		BELT,SQ1.8-117.7
16	84-ZG1-211-019		SPR-E CAM S
17	84-ZG1-215-219		GEAR,MAIN CAM BLU
18	84-ZG1-216-219		SLIDE,MECHA CAM YEL
19	84-ZG1-205-119		GEAR,TRAY
20	84-ZG1-206-119		GEAR,RELAY
21	84-ZG1-219-019		PULLY,RELAY BGE
22	84-ZG1-221-019		GEAR,MAIN TT
23	84-ZG1-238-01K		GEAR,WORM N
24	84-ZG1-224-019		LEVER,TT
25	84-ZG1-225-010		BELT,SQ1.0-63.3
26	87-036-326-010		MAGNET,CLAMPER 93<A,B,Z,WR,V5>
26	83-ZG3-602-010		RING,MAG<V3L,V4L>
27	80-CD3-214-019		CUSH CD A
28	84-ZG1-248-019		SPR-C,WORM
29	82-DW1-220-019		SPACER,DIA 3.6-8-0.24<V3L>
A	87-067-703-019		BVT2+3-10 (W/0 SLOT)<EXCEPT WR>
B	87-251-070-419		U+2.6-3<Z>
C	87-342-036-219		UT2+2-8<V3L,V4L,V5>
D	87-067-579-019		BVT 2+3-8 W/O SLOT<V3L,V4L>
E	81-557-598-010		UTT+2-5 C-TITE<V4L>
F	87-067-767-019		BVTT+2.6-6<V3L>
G	87-067-058-019		FW,3.2-8-0.5<V4L>

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C5N <WR>)

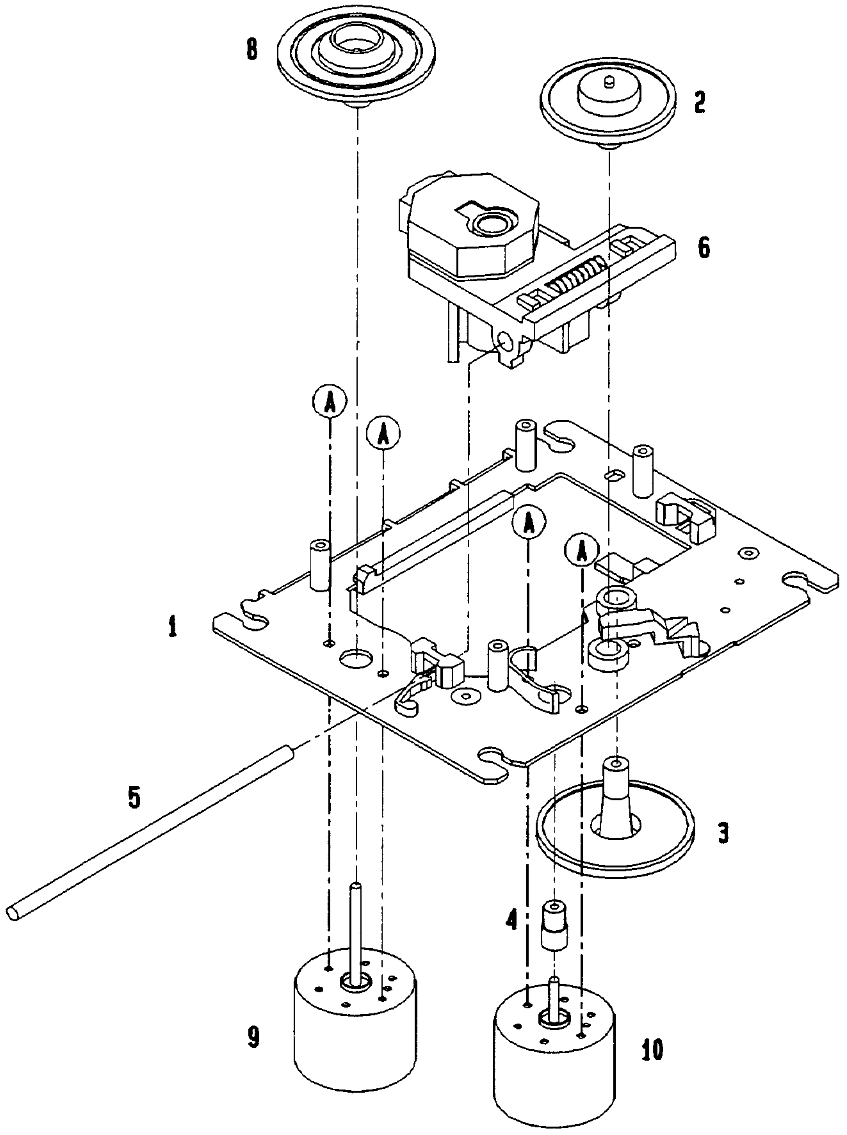


CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C5N <WR>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION	REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S	6	87-070-445-010		PICK-UP,KSS-213B
2	83-ZG2-204-419		GEAR,A	8	83-ZG2-227-01K		TURN TABLE,C1
3	83-ZG2-205-219		GEAR,B	A	87-261-032-219		SCREW V+2-3
4	83-ZG2-220-01K		GEAR MOTOR 2				
5	83-ZG2-207-119		SHAFT,SLIDE				

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)



CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION	REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S	6	87-070-445-010		PICK-UP,KSS-213B
2	83-ZG2-204-419		GEAR,A	8	83-ZG2-233-019		TURN TABLE,A5
3	83-ZG2-205-219		GEAR,B	9	87-045-358-019		MOT,RF-310T A 43
4	83-ZG2-220-01K		GEAR MOTOR 2	10	87-045-356-019		MOT,RF-310T A 30
5	83-ZG2-207-119		SHAFT,SLIDE	A	87-261-032-219		SCREW V+2-3

4ZG-1A

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-070-294-019		IC,CXD2508AQ
	87-017-745-019		IC,CXA1782BQ
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>
TRANSISTOR			
	87-026-239-089		C-TR,DTC114TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-A30-039-040		C-TR,2SD1383K<D>
DIODE			
	87-020-465-089		DIODE,1SS133
	87-020-330-089		C-DIODE,DAP202K
3CD C.B			
C101	87-010-194-089		C-CAP,S 0.047-25 F
C102	87-010-180-089		C-CAP,S 1500P-50 B
C103	87-018-134-089		CAP,TC-U 0.01-16 Y
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-015-698-049		CAP,E 4.7-50 7L
C106	87-010-060-049		CAP,E 100-16 7L
C107	87-010-197-089		C-CAP,S 0.01-25 B
C108	87-016-461-089		C-CAP,S 0.47-16 F
C109	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-318-089		C-CAP,S 47P-50 CH
C116	87-010-318-089		C-CAP,S 47P-50 CH
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-260-089		CAP,E 47-25 SME
C119	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C120	87-018-209-080		CAP,TC-U 0.1-50 F
C121	87-018-134-089		CAP,TC-U 0.01-16 Y
C151	87-010-182-089		C-CAP,S 2200P-50 B
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-196-089		C-CAP,S 0.1-25 F
C154	87-010-196-089		C-CAP,S 0.1-25 F
C155	87-010-404-089		CAP,E 4.7-50 SME
C156	87-010-193-089		C-CAP,S 0.033-25 F
C157	87-010-197-089		C-CAP,S 0.01-25 B
C158	87-010-401-089		CAP,E 1-50 SME
C159	87-010-382-089		CAP,E 22-25 SME
C160	87-010-213-089		C-CAP,S 0.015-25 B
C161	87-018-134-089		CAP,TC-U 0.01-16 Y
C162	87-010-263-089		CAP,E 100-10 SME 5X11
C163	87-010-197-089		C-CAP,S 0.01-25 B
C164	87-010-193-089		C-CAP,S 0.033-25 F
C165	87-010-197-089		C-CAP,S 0.01-25 B
C166	87-010-193-089		C-CAP,S 0.033-25 F
C167	87-010-197-089		C-CAP,S 0.01-25 B
C169	87-010-150-089		C-CAP,S 6P-50 CH

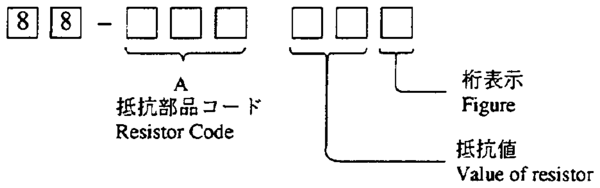
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C170	87-010-263-089		CAP,E 100-10 SME 5X11
C171	87-010-178-089		C-CAP,S 1000P-50 B
C172	87-010-198-089		C-CAP,S 0.022-25 B
C173	87-010-196-089		C-CAP,S 0.1-25 F
C174	87-010-197-089		C-CAP,S 0.01-25 B
C175	87-010-263-089		CAP,E 100-10 SME 5X11
C176	87-010-248-089		CAP,E 220-10 SME
C177	87-010-197-089		C-CAP,S 0.01-25 B
C178	87-010-260-089		CAP,E 47-25 SME
C179	87-010-196-089		C-CAP,S 0.1-25 F
C180	87-010-196-089		C-CAP,S 0.1-25 F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		G-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16 11L
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C511	87-010-185-089		C-CAP,S 3900P-50 B
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-137-080		CAP,E,22-16 BP
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-049		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-197-089		C-CAP,S 0.01-25 B<G>
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R177	87-022-365-089		C-RES,S 100K-1/10W F
R178	87-022-363-089		C-RES,S 68K-1/10W F
R179	87-022-363-089		C-RES,S 68K-1/10W F
R180	87-022-363-089		C-RES,S 68K-1/10W F
R181	87-022-363-089		C-RES,S 68K-1/10W F
R182	87-022-365-089		C-RES,S 100K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-175-089		SFR,47K DIA6 V
SFR152	87-024-176-089		SFR,100K DIA6 V
SFR153	87-024-176-089		SFR,100K DIA6 V

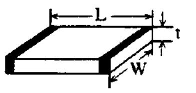
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V
MOTOR C.B			
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード：A Resistor Code: A
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

■ IC DESCRIPTION

CXA1782BQ .... See page 64

LC7872E .... See page 62

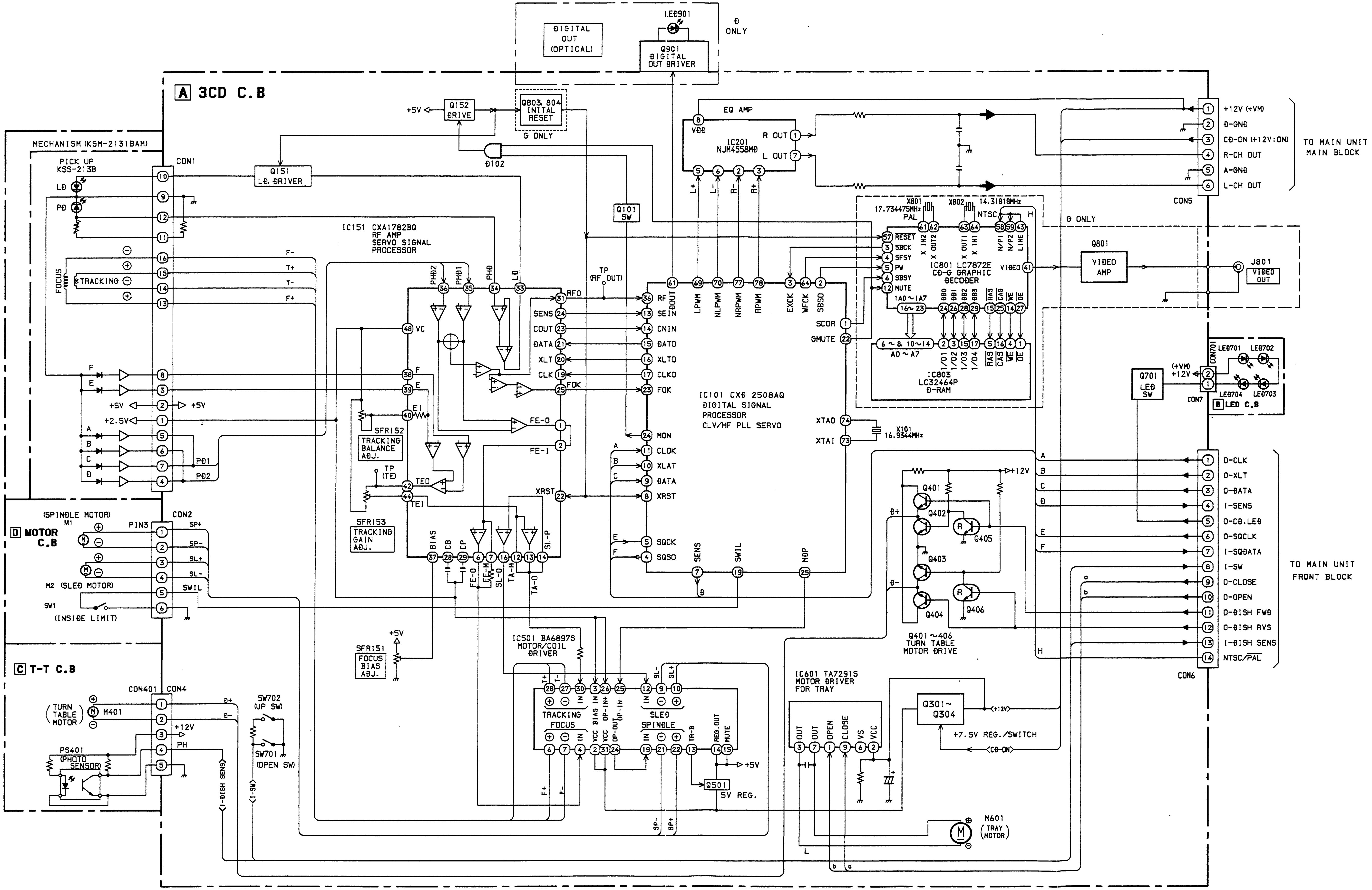
■ MECHANICAL EXPLODED VIEW 1／1

See page 95

■ MECHANICAL PARTS LIST 1／1

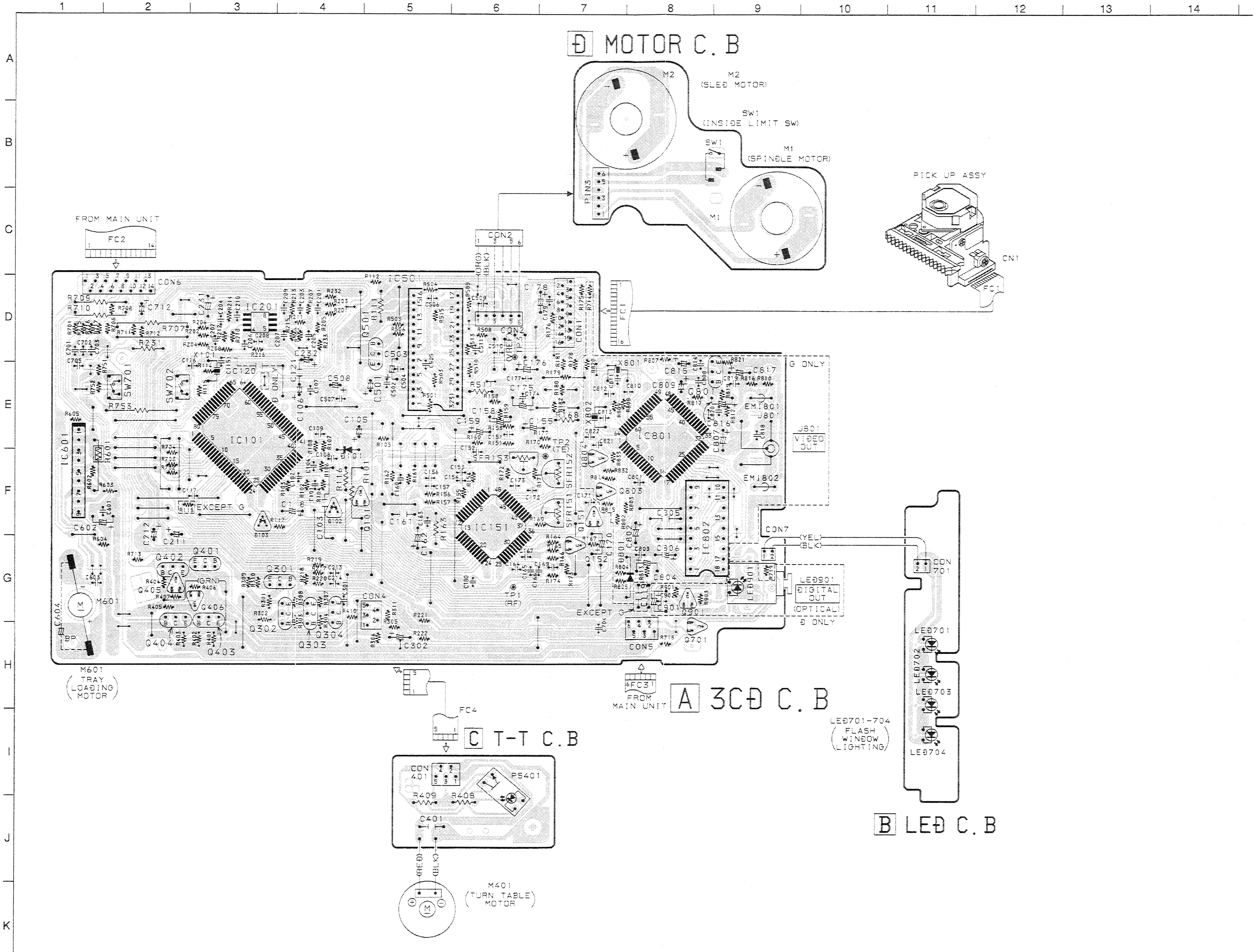
See page 96

BLOCK DIAGRAM

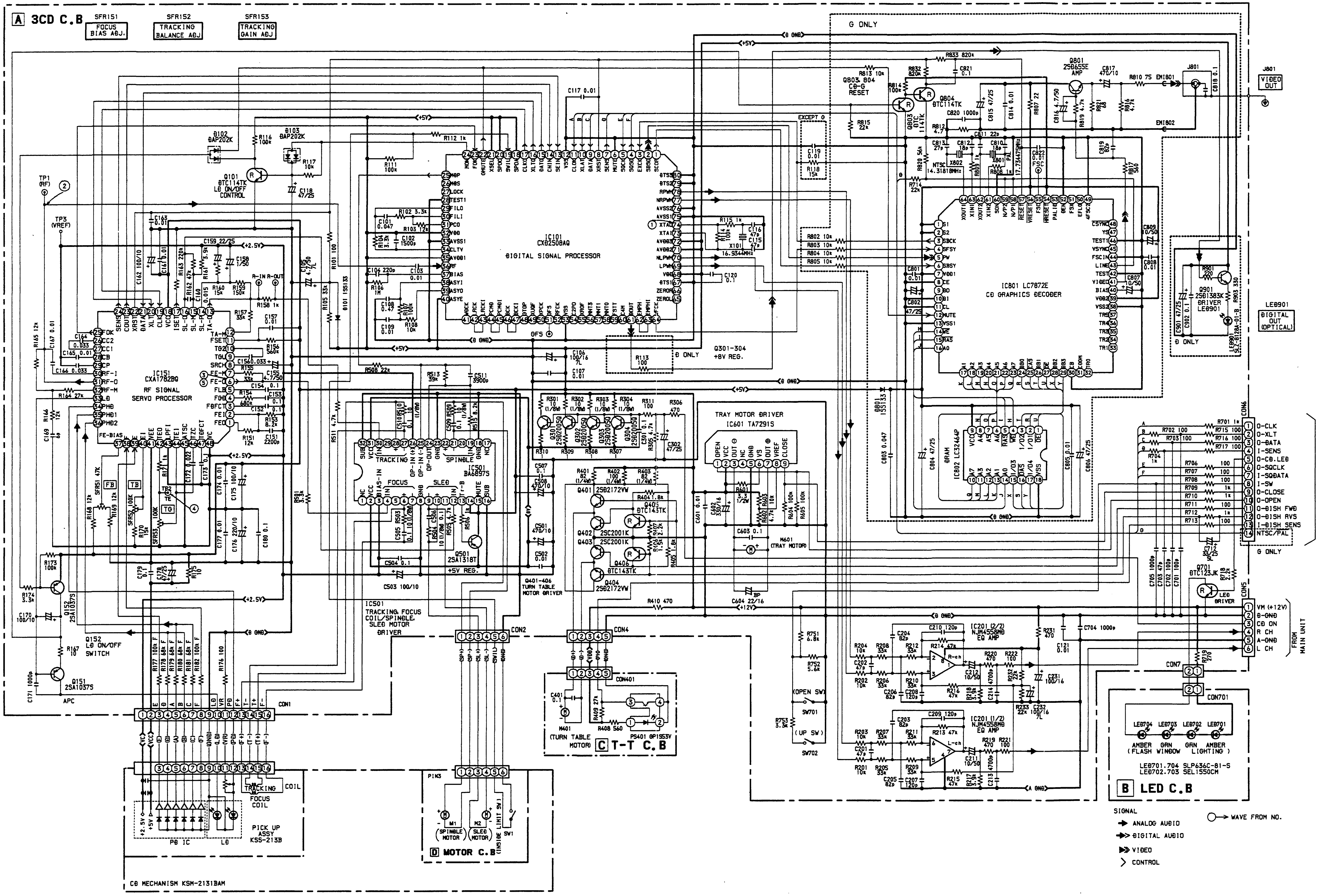


A 3CD C.B
MECHANISM (KSM-2131BAM)
PICK UP KSS-213B
LD
PD
FOCUS
TRACKING
CON1
Q151 LD DRIVER
Q152 DRIVE
+5V
Q803, 804 INITAL RESET
G ONLY
D102
Q101 SW
DIGITAL OUT (OPTICAL)
LED901
Q901 DIGITAL OUT DRIVER
D ONLY
IC151 CXA1782BQ RF AMP SERVO SIGNAL PROCESSOR
F-
T+
T-
F+
PHD2
PHD1
PHD
LD
RFO
SENS
COUT
DATA
XLT
CLK
FOK
VC
FE-O
FE-I
TEO
TEI
XRST
BIAS
CB
CP
SL-P
TA-M
TA-O
SFR152 TRACKING BALANCE ADJ.
SFR153 TRACKING GAIN ADJ.
SFR151 FOCUS BIAS ADJ.
TP (RF OUT)
TP (TE)
+2.5V
PD1
PD2
IC101 CXD 2508AQ DIGITAL SIGNAL PROCESSOR CLV/HF PLL SERVO
RF
SEIN
CNIN
DATO
XLTO
CLKO
MON
CLOK
XLAT
DATA
SQCK
SQSO
SENS
SWIL
MDP
DOUT
LPWM
NLPWM
NRPWM
RPWM
EXCK
WFCK
SBSO
SCOR
GMUTE
XTAO
XTAI
X101 16.9344MHz
EQ AMP
IC201 NJM4558MD
VDD
R OUT
L OUT
L+
L-
R-
R+
X801 17.734475MHz PAL
X802 14.31818MHz NTSC
IC801 LC7872E CD-G GRAPHIC DECODER
RESET
SBCK
SFSY
PW
SBSY
MUTE
VIDEO
IA0~IA7
IC803 LC32464P D-RAM
A0~A7
G ONLY
Q801 VIDEO AMP
J801 VIDEO OUT
CON5
+12V (+VM)
D-GND
CD-ON (+12V:ON)
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
CON701
LED701
LED702
LED704
LED703
CON7
B LED C.B
Q701 LED SW
(+VM) +12V
CON6
O-CLK
O-XLT
O-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
TO MAIN UNIT FRONT BLOCK
Q401~406 TURN TABLE MOTOR DRIVE
D MOTOR C.B
(SPINDLE MOTOR) M1
PIN3
CON2
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT)
SWIL
C T-T C.B
CON401
CON4
(TURN TABLE MOTOR) M401
PS401 (PHOTO SENSOR)
+12V
PH
(I-DISH SENS)
(I-SW)
SW702 (UP SW)
SW701 (OPEN SW)
IC501 BA6897S MOTOR/COIL DRIVER
TRACKING
FOCUS
SLED
SPINDLE
REG.OUT
MUTE
Q501 5V REG.
IC601 TA7291S MOTOR DRIVER FOR TRAY
Q301~Q304
+7.5V REG./SWITCH
(CD-ON)
M601 (TRAY MOTOR)

WIRING

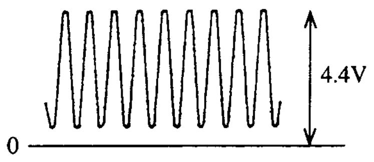

1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
Ð MOTOR C.B
M2
M2 (SLEÐ MOTOR)
SW1 (INSIÐE LIMIT SW)
SW1
M1 (SPINÐLE MOTOR)
PIN3
M1
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
(ORG)
(BLK)
IC50
IC201
IC120
IC101
IC151
IC601
C801
IC802
SW701
SW702
X101
X801
X802
Q501
Q101
Q401
Q402
Q403
Q404
Q405
Q406
Q301
Q302
Q303
Q304
Q801
Q803
Q804
Q901
Q701
CON1
CON4
CON5
CON7
(YEL)
(BLK)
J801
J801 VIÐEO OUT
G ONLY
EM1801
EM1802
TP1 (RF)
TP2 (TE)
SFR151
SFR152
SFR153
EXCEPT G
Ð ONLY
LEÐ901
LEÐ901 ÐIGITAL OUT (OPTICAL)
M601
M601 TRAY LOAÐING MOTOR
C404
BP
FC3
FROM MAIN UNIT
A 3CÐ C.B
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(REÐ)
(BLK)
M401 (TURN TABLE) MOTOR
CON 701
LEÐ701
LEÐ702
LEÐ703
LEÐ704
LEÐ701-704 (FLASH WINÐOW LIGHTING)
B LEÐ C.B

SCHEMATIC DIAGRAM

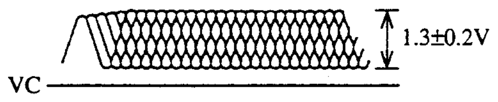

A 3CD C.B
SFR151 FOCUS BIAS ADJ.
SFR152 TRACKING BALANCE ADJ
SFR153 TRACKING GAIN ADJ
G ONLY
EXCEPT G
IC101 CXD2508AQ DIGITAL SIGNAL PROCESSOR
IC151 CXA1782BQ RF SIGNAL SERVO PROCESSOR
IC801 LC7872E CD GRAPHICS DECODER
IC802 LC3244P DRAM
IC501 BA6897S
IC501 TRACKING, FOCUS COIL/SPINDLE, SLED MOTOR DRIVER
TRAY MOTOR DRIVER IC601 TA7291S
Q101 DTC114TK LD ON/OFF CONTROL
Q152 LD ON/OFF SWITCH
Q151 2SA1037S APC
Q501 2SA1318T +5V REG.
Q301-304 +8V REG.
Q401-406 TURN TABLE MOTOR DRIVER
Q801 2SD655E AMP
Q803, 804 CD-G RESET
Q901 2SB1383K DRIVER LED901
Q701 DTC123JK LED DRIVER
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD EQ AMP
J801 VIDEO OUT
LED901 DIGITAL OUT (OPTICAL)
D ONLY
CON1
CON2
CON4
CON5
CON6
CON7
CON401
CON701
M601 (TRAY MOTOR)
M401 (TURN TABLE MOTOR)
PS401 DP1553V
C T-T C.B
D MOTOR C.B
M1 SPINDLE MOTOR
M2 SLED MOTOR
SW1 (INSIDE LIMIT SW)
PICK UP ASSY KSS-213B
PD IC
LD
TRACKING COIL
FOCUS COIL
CD MECHANISM KSM-2131BAM
OPEN SW SW701
UP SW SW702
LED704 LED703 LED702 LED701
AMBER GRN GRN AMBER
(FLASH WINDOW LIGHTING)
LED701.704 SLP636C-81-S
LED702.703 SEL1550CM
B LED C.B
FROM MAIN UNIT
D-CLK
D-XLT
D-DATA
I-SENS
D-CD.LED
I-SQCLK
I-SQDATA
I-SW
D-CLOSE
D-OPEN
D-DISH FWD
D-DISH RVS
I-DISH SENS
NTSC/PAL
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO.
TP1 (RF)
TP3 (VREF)

WAVE FORM

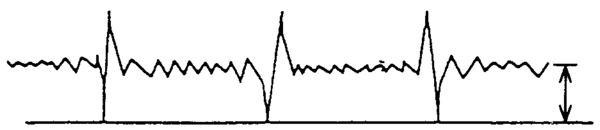
① SYSTEM CLOCK
IC101 Pin (74) (XTAO)
f=16.9344MHz
VOLT/DIV: 2V
TIME/DIV: 0.1µS



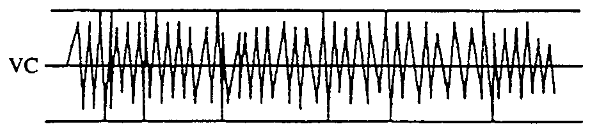
② RF
TP1 (RF)
VOLT/DIV: 500mV
TIME/DIV: 0.5µS



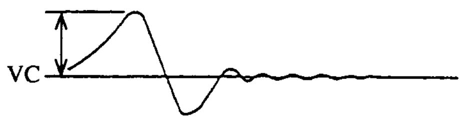
③ Focus
IC151 Pin ⑥ (FE-O)
VOLT/DIV: 200mV
TIME/DIV: 2mS



④ Tracking
TP2 (TE)
TIME/DIV: 1mS

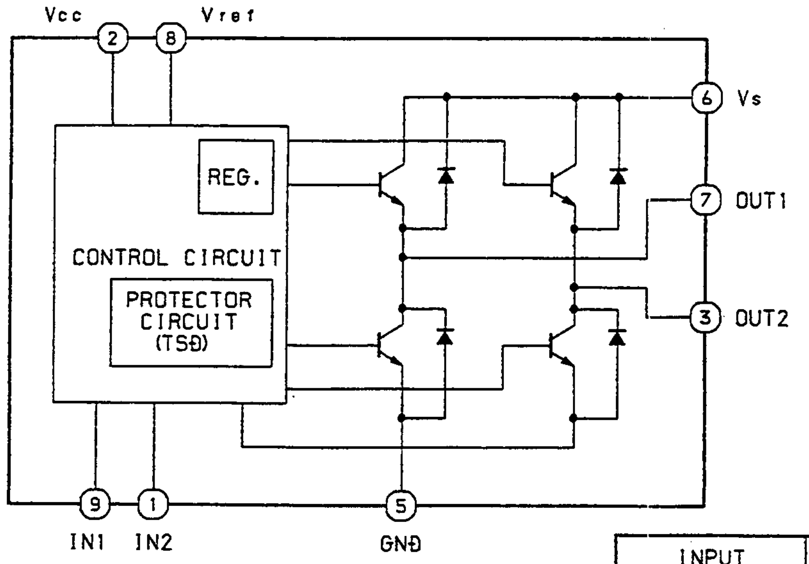


⑤ Focus Search
IC151 Pin ⑥ (FE-O)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, CXD2508AQ

Pin No.	Pin name	I/O	Description
1	SCOR	O	1H when the subcode sync S0 or S1 is detected.
2	SBSO	O	SUBP~W serial output.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	H to mute. L to cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset. L to reset.
9	DATA	I	Serial data input from CPU .
10	XLAT	I	Latch input from CPU. Latching serial data at fall down.
11	CLOK	I	Clock input from CPU to transfer serial data.
12	VSS	—	GND.
13	SEIN	I	SENS input from SSP.
14	CNIN	I	Numbers of track jump are counted and input.
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latched output to SSP. Latched at fall down edge.
17	CLKO	O	Clock input from SSP to transfer serial data.
18, 20	SPOA, C	I	Microprocessor expansion interface.
19	XTSL	I	X'tal selection input terminal. "L" at 16.9344MHz X'tal. "H" at 33.86888MHz.
22	XLON	O	Microprocessor expansion interface.
23	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output.
27	LOCK	O	GFS is sampled by 460Hz. H output when GFS is H. L output when GFS is L for 8 consecutive times.
28	TEST1	I	TEST. (Connected to GND)
29	FILO	O	Filter output to master PLL. (slave=digital PLL)
30	FILI	I	Filter input to master PLL.
31	PCO	O	Charge-pump output to master PLL.
32	VDD	—	Power supply input. (+5V)
33	AVSS1	—	GND.
34	CLTV	I	VCO control voltage input to master PLL.
35	AVDD1	—	Power supply input. (+5V)
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Comparate voltage input to asymmetry correction circuit.
39	ASYO	O	EFM full swing output. (L=VSS, H=VDD)
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON
41	WDCK	O	D/A interface, word clock (2Fs) for 48-bit slot.
42	LRCK	O	D/A interface, LR clock (Fs) for 48-bit slot.

Pin No.	Pin name	I/O	Description
43	LRCKI	I	LR clock input to DAC. (48-bit slot)
44	PCMD	O	D/A interface, serial data. (2's complement, MSB first)
45	PCMDI	I	Audio data input to DAC. (48-bit slot)
46	BCK	O	D/A interface, bit clock.
47	BCKI	I	Bit clock input to DAC. (48-bit slot)
48	GTOP	O	GTOP output.
49	XUGF	O	XUFG output.
50	XPCK	O	XPLCK output.
51	GFS	O	GFS output.
52	RFCK	O	RFCK output.
53	VSS	—	GND.
54	C2PO	O	C2PO output.
55	XROF	O	XRAOF output.
56	MNT3	O	MNT3 output.
57	MNT1	O	MNT1 output.
58	MNT0	O	MNT0 output.
59	FSTT	O	Pins-73 and -74 divided-by 2/3 output.
60	C4M	O	4.2336MHz output.
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	H when the playback disc has emphasis. L when it does not.
63	EMPHI	I	DAC emphasis ON/OFF. H when ON. L when OFF
64	WFCK	O	WFCK (WRITE FRAME CLOCK) output.
65	ZEROL	O	No sound data detection output. H (L-ch) when no sound data is detected.
66	ZEROR	O	No sound data detection output. H (R-ch) when no sound data is detected.
67	DTSI	I	TEST for DAC. (Normally "L")
68	VDD	—	Power supply input. (+5V)
69	NLPWM	O	L-ch PWM output. (reversed polarity)
70	LPWM	O	L-ch PWM output. (normal polarity)
71	AVDD2	—	Power supply input to L-ch PWM driver. (Connected to +5V)
72	AVDD3	—	Power supply input to X'tal. (Connected to +5V)
73	XTAI	I	X'tal input to 33.8688MHz oscillator circuit.
74	XTAO	O	33.8688MHz X'tal oscillator circuit output.
75	AVSS1	—	GND input to X'tal. (Connected GND)
76	AVSS2	—	GND input to PWM driver. (Connected to GND)
77	NRPWM	O	R-ch PWM output. (reversed phase)
78	RPWM	O	R-ch PWM output. (normal phase)
79	DTS2	I	TEST-2 for DAC. (Normally "L")
80	DTS3	I	TEST-3 for DAC. (Normally "L")

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

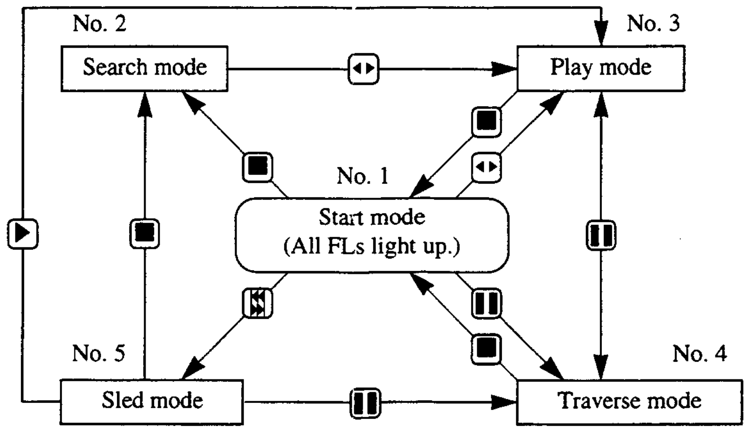
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key	CD--	• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD11	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	▮▮ key	CD11	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ▮▮ status is active. If they are pressed, playback will not be possible after the ▮▮ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ▮▮ status, press the ■ key and return to the start mode (No.1).

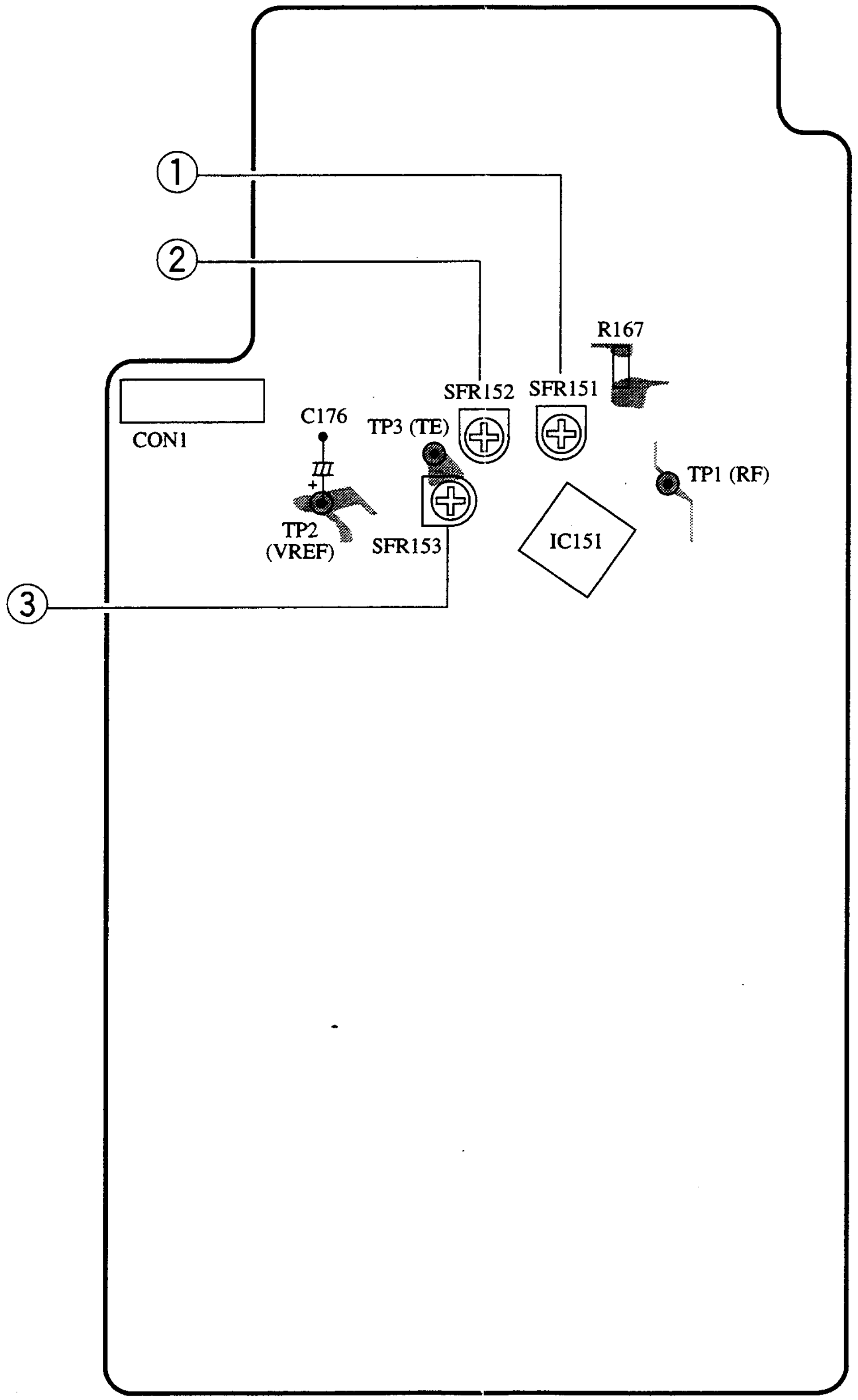
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



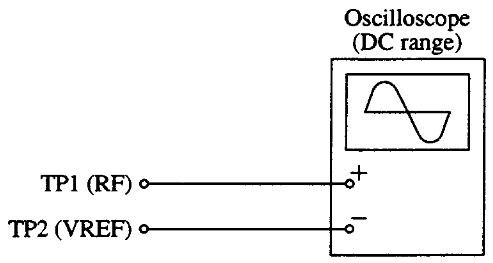
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

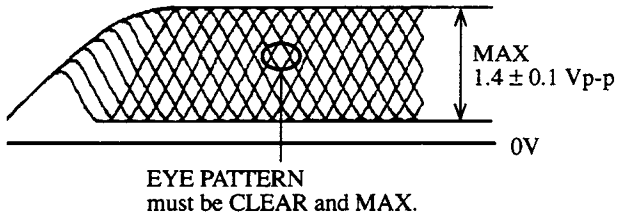

①
②
③
R167
SFR152
SFR151
CON1
C176
TP3 (TE)
TP1 (RF)
TP2
(VREF)
SFR153
IC151

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment
   Make the focus bias adjustment when replacing and repairing the optical block.

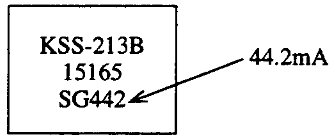

Oscilloscope
(DC range)
TP1 (RF)
TP2 (VREF)
+
–

1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR151 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.


MAX
1.4 ± 0.1 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

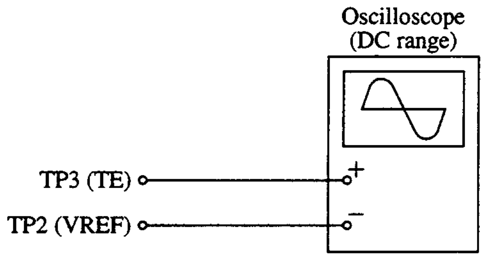
VOLT/DIV: 0.5 V
TIME/DIV: 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R167 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

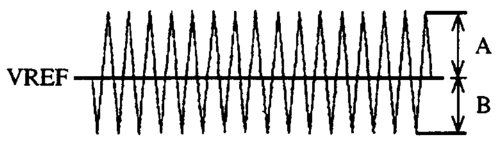

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R167}}{10\Omega}$$

2. Tracking Balance Adjustment


Oscilloscope
(DC range)
TP3 (TE)
TP2 (VREF)
+
–

1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR153 to reduce the tracking gain.
5) Adjust SFR152 so that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.



A=B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

   A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
   Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
  When the gain adjustment is off, the symptoms below appear.

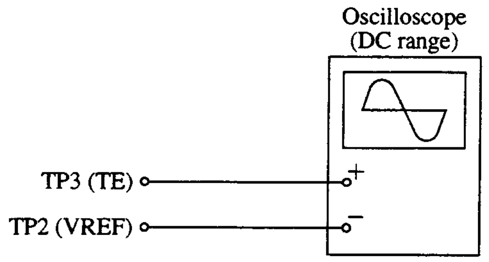
Gain Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP→ ▶PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP→▶PLAY or automatic selection (⏮, ⏭ buttons pressed.)	———	low
● Disc stops to rotate shortly after STOP→▶PLAY.	low or high	———
● Sound is interrupted during PLAY. Or time counter display stops.	———	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

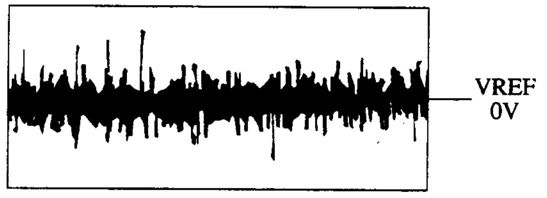
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



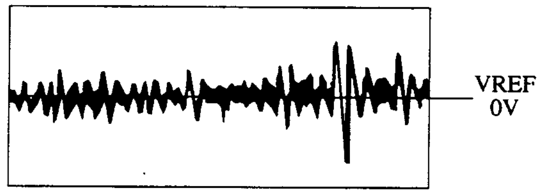
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD C.B.
4) Adjust SFR153 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

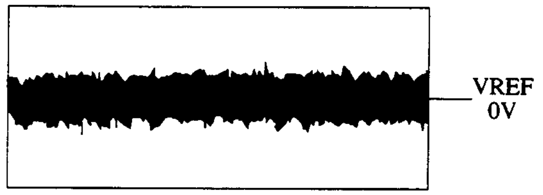
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



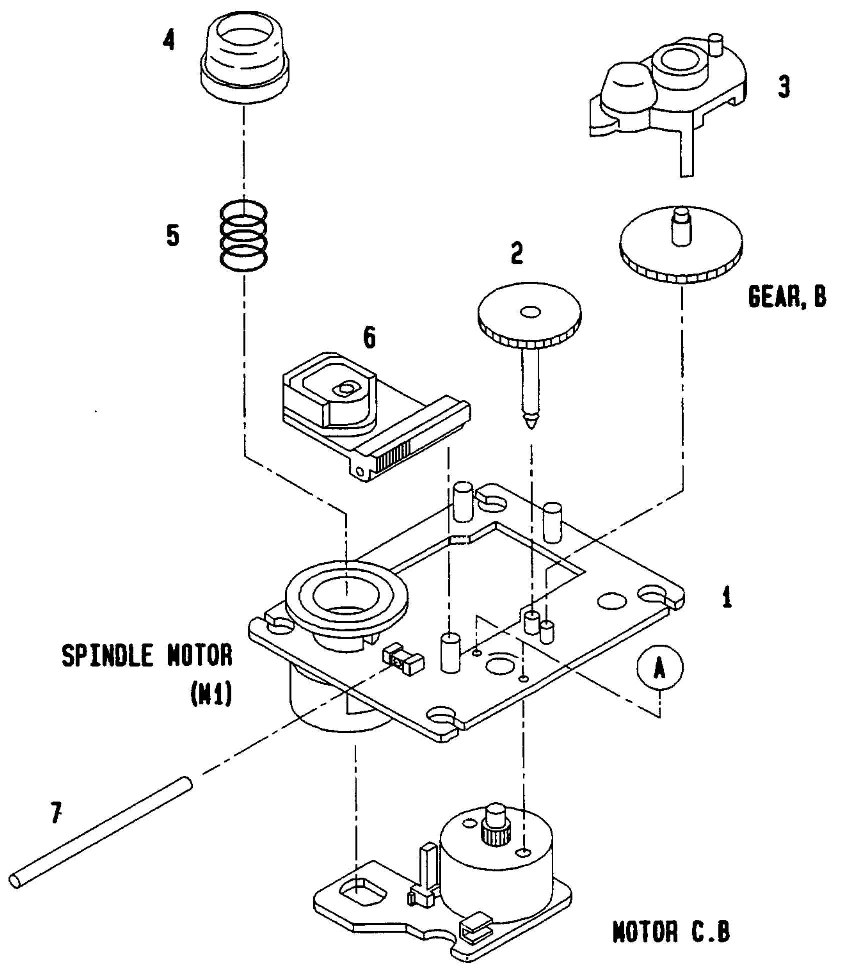
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1 ／ 1 (KSM-2131BAM <A, B>)



CD MECHANISM PARTS LIST 1 ／ 1 (KSM-2131BAM <A, B>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	- - -		MOTOR CHASSIS ASSY
2	92-625-188-020		GEAR(A)
3	92-625-544-010		COVER
4	92-625-186-020		RING CENTER C
5	92-625-191-010		SPRING COMPRESSION
6	87-070-445-010		OPTICAL PICK UP KSS-213B
7	94-917-565-010		SHAFT SLED
A	87-261-032-210		V+2-3

4ZG-1B

ELECTRICAL MAIN PARTS LIST

DESCRIPTION で判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-070-336-019		IC,TC 9284 BF
	87-002-407-019		IC TA8191F
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>
TRANSISTOR			
	87-026-297-089		C-TR,DTA144TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-026-239-089		C-TR,DTC114TK<G>
	89-327-125-089		C-TR,2SC2712GR<D>
DIODE			
	87-020-465-089		DIODE,1SS133
3CD C.B			
C101	87-015-819-089		CHIP CAP 0.01
C102	87-015-819-089		CHIP CAP 0.01
C103	87-015-676-089		CAP,E 47-6.3 7L
C104	87-015-676-089		CAP,E 47-6.3 7L
C106	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-404-089		CAP,E 4.7-50 SME
C108	87-010-197-089		C-CAP,S 0.01-25 B
C109	87-010-248-049		CAP,E 220-10 SME
C110	87-010-263-049		CAP,E 100-10
C111	87-010-309-089		C-CAP,1000P-50 CH
C112	87-010-197-089		C-CAP,S 0.01-25 B
C113	87-010-184-089		C-CAP,S 3300P-50 B
C114	87-010-060-049		CAP,E 100-16 7L
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-197-089		C-CAP,S 0.01-25 B
C117	87-010-322-089		C-CAP,S 100P-50 CH
C120	87-010-314-089		C-CAP,S 22P-50 CH
C121	87-010-314-089		C-CAP,S 22P-50 CH
C123	87-010-197-089		C-CAP,S 0.01-25 B
C124	87-010-184-089		C-CAP,S 3300P-50 B
C125	87-010-805-089		C-CAP,S 1-16F
C126	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C127	87-010-196-089		C-CAP,S 0.1-25 F
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-154-089		C-CAP,S 10P-50 CH
C154	87-010-322-089		C-CAP,S 100P-50 CH
C155	87-010-263-089		CAP,E 100-10 SME 5X11
C156	87-010-197-089		C-CAP,S 0.01-25 B
C157	87-012-141-089		C-CAP,S 0.22-16 F
C158	87-010-545-049		CAP E 0.22-50 SME
C159	87-015-683-080		CAP,E 33-16 7L
C160	87-010-193-089		C-CAP,S 0.033-25 F
C161	87-010-197-089		C-CAP,S 0.01-25 B

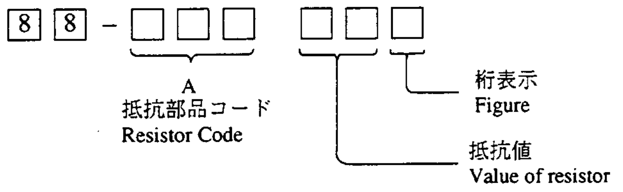
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C162	87-010-248-089		CAP,E 220-10 SME
C163	87-010-260-089		CAP,E 47-25 SME
C164	87-010-403-089		CAP,E 3.3-50 SME
C165	87-010-213-089		C-CAP,S 0.015-25 B
C166	87-010-187-089		C-CAP,S 5600P-50 B
C167	87-012-365-089		C-CAP,S 0.027-25V BK
C168	87-010-189-089		C-CAP,S 8200P-50 B
C169	87-015-883-089		C-CAP 0.022-25BK
C170	87-010-320-089		C-CAP,S 68P-50 CH
C171	87-010-382-089		CAP,E 22-25 SME
C172	87-010-197-089		C-CAP,S 0.01-25 B
C173	87-010-263-089		CAP,E 100-10 SME 5X11
C174	87-010-178-089		C-CAP,S 1000P-50 B
C175	87-010-805-089		C-CAP,S 1-16F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	.87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-089		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-403-089		CAP,E 3.3-50 SME<G>
C824	87-018-134-089		CAP,TC-U 0.01-16 Y
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R184	87-022-361-089		C-RES,S 47K-1/10W F
R185	87-022-361-089		C-RES,S 47K-1/10W F
R186	87-022-361-089		C-RES,S 47K-1/10W F
R187	87-022-361-089		C-RES,S 47K-1/10W F
R188	87-022-361-089		C-RES,S 47K-1/10W F
R189	87-022-361-089		C-RES,S 47K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-176-089		SFR,100K DIA6 V

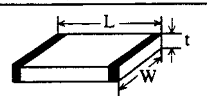
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
SFR152	87-024-171-089		SFR 4.7K DIA6 V
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V
MOTOR C.B			
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード ：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

■ IC DESCRIPTION

LC7872E .... See page 62

■ MECHANICAL EXPLODED VIEW 1／1

See page 95

■ MECHANICAL PARTS LIST 1／1

See page 96

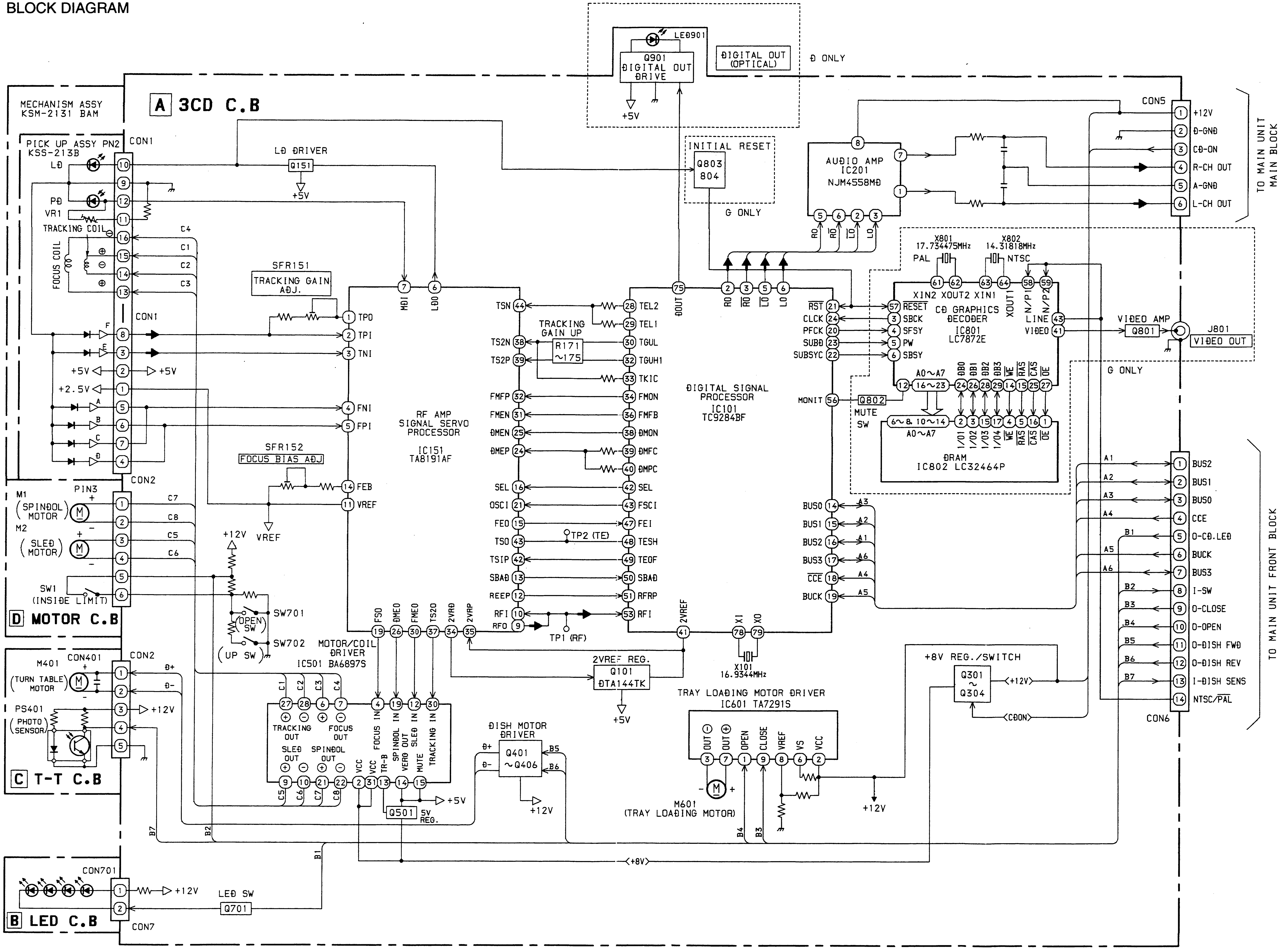
■ CD MECHANISM EXPLODED VIEW 1／1

See page 114

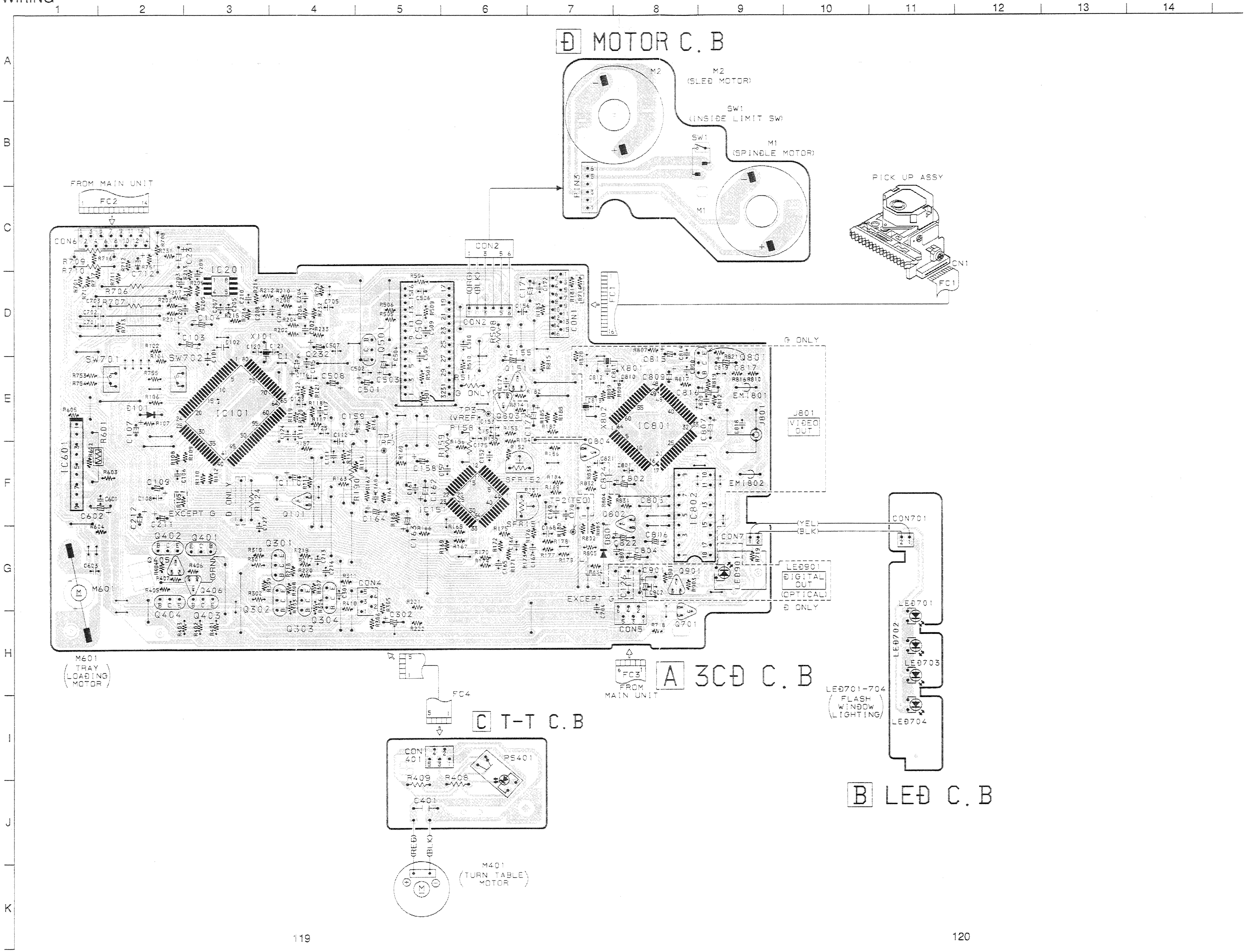
■ CD MECHANISM PARTS LIST 1／1

See page 114

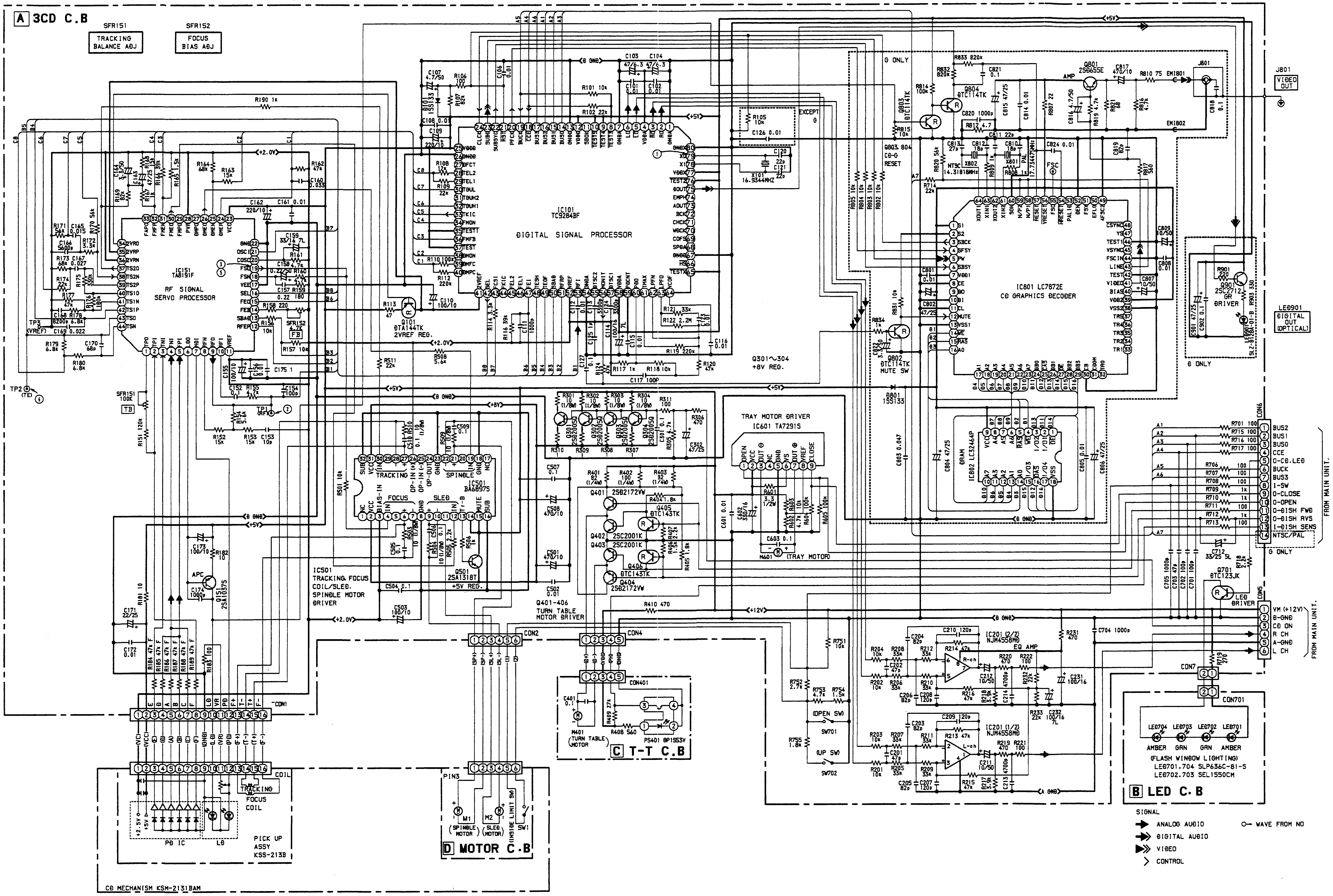
BLOCK DIAGRAM


MECHANISM ASSY KSM-2131 BAM
PICK UP ASSY PN2 KSS-213B
LD
PD
VR1
TRACKING COIL
FOCUS COIL
CON1
CON2
A 3CD C.B
LD DRIVER
Q151
+5V
SFR151
TRACKING GAIN ADJ.
SFR152
FOCUS BIAS ADJ
VREF
+12V
MDI
LDO
TP0
TPI
TNI
FNI
FPI
FEB
RF AMP SIGNAL SERVO PROCESSOR
IC151 TA8191AF
TSN
TS2N
TS2P
FMFP
FMEN
DMEN
DMEP
SEL
OSCI
FEO
TSO
TSIP
SBAD
REEP
RFI
RFO
TEL2
TEL1
TGUL
TGUH1
TKIC
FMON
FMFB
DMON
DMFC
DMPC
FSCI
FEI
TESH
TEOF
RFRP
TRACKING GAIN UP
R171 ~175
TP2 (TE)
TP1 (RF)
DIGITAL SIGNAL PROCESSOR
IC101 TC9284BF
DOUT
RO
LO
RST
CLCK
PFCK
SUBD
SUBSYC
MONIT
BUS0
BUS1
BUS2
BUS3
CCE
BUCK
2VREF
XI
XO
X101 16.9344MHz
2VREF REG.
Q101 DTA144TK
LED901
Q901 DIGITAL OUT DRIVE
DIGITAL OUT (OPTICAL)
D ONLY
INITIAL RESET
Q803 804
G ONLY
AUDIO AMP IC201 NJM4558MD
CON5
+12V
D-GND
CD-ON
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
X801 17.734475MHz
PAL
X802 14.31818MHz
NTSC
XIN2 XOUT2 XIN1
XOUT1
N/P1
N/P2
RESET
SBCK
SFSY
PW
SBSY
CD GRAPHICS DECODER
IC801 LC7872E
LINE
VIDEO
VIDEO AMP
Q801
J801
VIDEO OUT
A0~A7
DB0 DB1 DB2 DB3 WE RAS CAS OE
Q802
MUTE SW
I/O1 I/O2 I/O3 I/O4 WE RAS CAS OE
DRAM IC802 LC32464P
CON6
BUS2
BUS1
BUS0
CCE
O-CD.LED
BUCK
BUS3
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH REV
I-DISH SENS
NTSC/PAL
TO MAIN UNIT FRONT BLOCK
+8V REG./SWITCH
Q301 ~ Q304
(+12V)
(CDON)
TRAY LOADING MOTOR DRIVER
IC601 TA7291S
OUT ⊖
OUT ⊕
OPEN
CLOSE
VREF
VS
VCC
M601 (TRAY LOADING MOTOR)
M1 (SPINDOL MOTOR)
M2 (SLED MOTOR)
PIN3
SW1 (INSIDE LIMIT)
D MOTOR C.B
SW701
(OPEN SW)
SW702
(UP SW)
MOTOR/COIL DRIVER
IC501 BA6897S
FSO
DMEO
FMEO
TS2O
2VRD
2VRP
TRACKING OUT
FOCUS OUT
SLED OUT
SPINDOL OUT
FOCUS IN
SPINDOL IN
SLED IN
TRACKING IN
VCC
TR-B
VERG OUT
MUTE
Q501 5V REG.
+5V
DISH MOTOR DRIVER
Q401 ~Q406
+12V
M401 (TURN TABLE MOTOR)
CON401
PS401 (PHOTO SENSOR)
C T-T C.B
CON701
B LED C.B
CON7
LED SW
Q701
(+8V)

WIRING

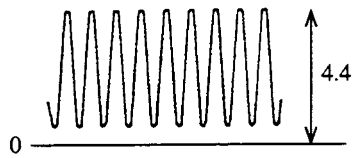

1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J K
Ð MOTOR C. B
M2
M2 (SLEÐ MOTOR)
SW1 (INSIDE LIMIT SW)
SW1
M1 (SPINÐLE MOTOR)
M1
PIN3
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
CON1
IC201
IC101
IC501
IC601
IC801
IC802
IC151
Q501
Q801
Q701
Q901
Q101
Q301
Q302
Q303
Q304
Q401
Q402
Q403
Q404
Q405
Q406
X101
X801
X802
SW701
SW702
Ð101
R601
C602
G ONLY
EXCEPT G
Ð ONLY
J801 VIÐEO OUT
EMI801
EMI802
TP3 (VREF)
TP2 (TEO)
SFR151
SFR152
CON4
CON5
CON7
CON701
(YEL)
(BLK)
LEÐ901 ÐIGITAL OUT (OPTICAL)
M601
M601 (TRAY LOAÐING MOTOR)
FC3
FROM MAIN UNIT
A 3CÐ C. B
FC4
C T-T C. B
CON 401
PS401
R409
R408
C401
(REÐ)
(BLK)
M401 (TURN TABLE MOTOR)
LEÐ701
LEÐ702
LEÐ703
LEÐ704
LEÐ701-704 (FLASH WINDOW LIGHTING)
B LEÐ C. B

SCHEMATIC DIAGRAM

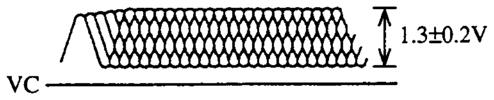

A 3CD C.B
SFR151 TRACKING BALANCE ADJ
SFR152 FOCUS BIAS ADJ
IC151 TA8191F RF SIGNAL SERVO PROCESSOR
IC101 TC9284BF DIGITAL SIGNAL PROCESSOR
IC801 LC7872E CD GRAPHICS DECODER
IC802 LC3246AP DRAM
IC501 BA6897S
IC501 TRACKING FOCUS COIL/SLED. SPINDLE MOTOR DRIVER
Q501 2SA1318T +5V REG.
Q101 DTA144TK 2VREF REG.
Q151 2SA1037S APC
Q301～304 +8V REG.
Q401～406 TURN TABLE MOTOR DRIVER
TRAY MOTOR DRIVER IC601 TA7291S
M601 (TRAY MOTOR)
Q801 2SB655E AMP
Q802 DTC114TK MUTE SW
Q803, 804 CD-G RESET
Q901 2SC2712 GR DRIVER
Q701 DTC123JK LED DRIVER
X101 16.9344MHZ
X802 NTSC 14.31818MHz
X801 PAL 17.734475MHz
G ONLY
EXCEPT G
J801 VIDEO OUT
LED901 DIGITAL OUT (OPTICAL)
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
CON6 FROM MAIN UNIT.
BUS2
BUS1
BUS0
CCE
D-CD.LED
BUCK
BUS3
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
CON5 FROM MAIN UNIT.
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
CON7
CON701
LED704 LED703 LED702 LED701
AMBER GRN GRN AMBER
(FLASH WINDOW LIGHTING)
LED701.704 SLP636C-81-S
LED702.703 SEL1550CM
B LED C.B
C T-T C.B
CON401
M401 (TURN TABLE) MOTOR
PS401 DP1S53Y
(OPEN SW) SW701
(UP SW) SW702
CON1
CON2
CON4
COIL
TRACKING
FOCUS COIL
PD IC
LD
PICK UP ASSY KSS-213B
CD MECHANISM KSM-2131BAM
PIN3
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
(INSIDE LIMIT SW) SW1
D MOTOR C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO

WAVE FORM

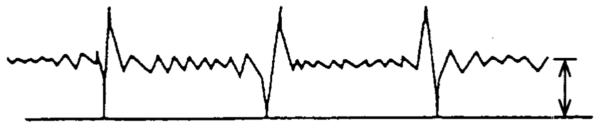
① SYSTEM CLOCK
IC101 Pin (79) (XO)
f=16.9344MHz
VOLT/DIV: 2V
TIME/DIV: 0.1µS



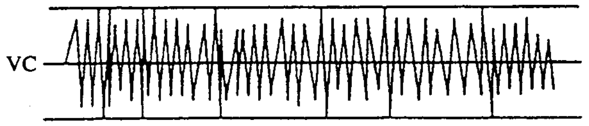
② RF
TP1 (RF)
VOLT/DIV: 500mV
TIME/DIV: 0.5µS



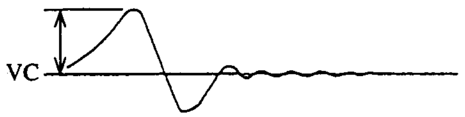
③ Focus
IC151 Pin ⑲ (FSO)
VOLT/DIV: 200mV
TIME/DIV: 2mS



④ Tracking
TP2 (TE)
TIME/DIV: 1mS

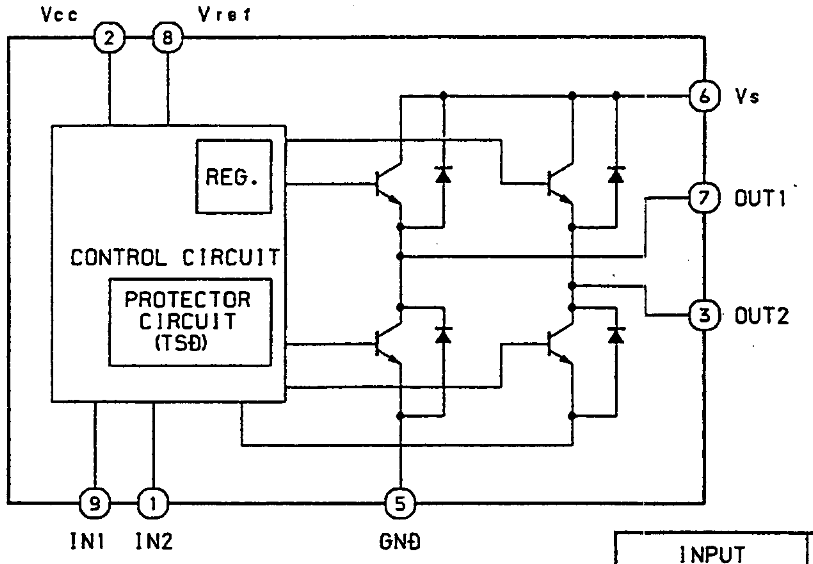


⑤ Focus Search
IC151 Pin ⑲ (FSO)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, TC9284BF

Pin No.	Pin name	I/O	Description
1	GNDA	—	D/A converter R-channel analog GND.
2	RO	O	R-channel data positive output.
3	$\overline{\mathrm{RO}}$	O	R-channel data inverted output.
4	VDA	—	D/A converter power supply.
5	$\overline{\mathrm{LO}}$	O	L-channel data inverted output.
6	LO	O	L-channel data positive output.
7	GNDA	—	D/A converter L-channel analog GND.
8~10	$\overline{\mathrm{TEST3}}$~$\overline{\mathrm{TEST5}}$	I	TEST pin. Normally "H" or open.
11	SBOK	O	Sub code Q data CRCC judgment result output. Judgment result OK: H
12	VDDD	—	Digital power supply. (+5 V)
13	GNDD	—	Digital GND.
14~17	BUS0~BUS3	I/O	µprocessor interface, data input/output.
18	CCE	I	µprocessor interface, chip enable signal input. When "L" : BUS 3~0 are active
19	BUCK	I	µprocessor interface, clock input.
20	PFCK	O	PB frame sync output.
21	$\overline{\mathrm{RST}}$	I	Reset signal input. "L" at reset.
22	SUBSYC	O	Sub code block sync output. When sub code is detected,"H" at S1 position.
23	SUBD	O	Sub code P~W output.
24	CLCK	I	Sub code P~W data read clock input.
25	VDDD	—	Digital power supply. (+5 V)
26	GNDD	—	Digital GND.
27	DFCT	O	Defect detection signal output. When defect is detected: "VREF", normally "HiZ".
28	TEL2	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
29	TEL1	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
30	TGUL	O	Analog switch output for tracking servo gain up. Polarity in gain-up mode and normal mode can be selected by command.
31	TGUH2	O	Analog switch output for tracking servo gain up. "HiZ" for gain-up, normally "VREF". TGUH1 during normal playback. TGUH2: not used
32	TUGH1	O	
33	TKIC	O	Tracking actuator kick signal output. NKICx and CKICx are used for kick during tracking gain adjustment. "VREF" for outermost track."O" for moving toward inner track. Normally "HiZ".
34	FMON	O	Analog switch output to turn ON/OFF the feed servo. "HiZ" to turn ON servo. "VREF" to turn OFF servo.
35	$\overline{\mathrm{TEST1}}$	I	TEST pin. Normally "H" or open.
36	FMFB	O	Feed motor FWD/BWD direction control signal output."2VREF" for outmost track. "O" for moving toward inner track. Normally "HiZ".
37	$\overline{\mathrm{TEST}}$	I	TEST pin. Normally "H" or open.
38	DMON	O	Analog switch output to select gain of the disc motor drive circuit. "HiZ" for CLV servo OFF, "HiZ" or "VREF" can be selected by command.

Pin No.	Pin name	I/O	Description
39	DMPC	O	Disc motor CLV servo AFC signal output.

Operation	Command	DMFC output
Motor acceleration	DMFK	"2VREF"
CLV servo ON	DMSV	AFC signal (PWM)
Motor brake	DMBK	"L"
CLV servo OFF	DMOFF	"VREF"

Pin No.	Pin name	I/O	Description
40	DMPC	O	Disc motor CLV servo APC signal output.
41	2VREF	—	Analog power supply. (twice the "VREF" voltage)
42	SEL	O	Servo mode select output. It turns ON/OFF the laser diode (LD) and focus servo.

SEL output	LD	Focus servo	Operating mode
"L"	OFF	OFF	LD OFF
"HiZ"	ON	OFF	Focus search
"H"	ON	ON	Focus ON (normal play)

Pin No.	Pin name	I/O	Description
43	FCSI	O	Focus actuator drive signal output during focus search mode. "VDDA" to move the lens far from disc. "L" to move the lens closer to disc. Normally "HiZ".
44	FKIC	O	Focus actuator drive signal output during focus adjustment mode.ÅgVDDAÅhto move the lens far from disc. "L" to move the lens closer to disc. Normally "HiZ".
45, 46	FEL1, FEL2	O	Focus gain adjustment analog switch output. "VREF" or "HiZ".
47	FEI	I	Focus error signal input.
48	TESH	I	Analog switch input to track error signal sample-and-hold.
49	TEOF	O	Focus gain adjustment analog switch output."VREF" when tracking servo off.
50	SBAD	I	Sub beam added signal input.
51	RFRP	I	RF ripple signal input.
52	VREF	—	Analog power supply.
53	RFI	I	RF signal input.
54	GNDA	—	Analog GND.
55	DTSC2	O	Data slice control EFM signal inverted output.
56	MONI T	O	Internal signal monitored output. EFMO, PLCK or LOCK signals can be selected by command. Can be muted. (Not used)
57	DTSC 1	O	Data slice control EFM signal positive polarity output.
58	VDDA	—	Analog power supply.
59	PDCNT	I	PDO output control signal input. "L" to fix to "HiZ" forcibly. "H" : normal output.
60	PDO	O	Phase error signal between EFM and PLCK signals is output.
61	TMAX	O	TMAX detected result output.

TMAX detected result	TMAX output
Longer than specified cycle	"L"
Shorter than specified cycle	"VREF"
Within specified cycle	"HiZ"

Pin No.	Pin name	I/O	Description
62	LPFN	I	Low-pass filter amplifier inverted input.

Pin No.	Pin name	I/O	Description
63	LPFO	O	Low-pass filter amplifier output.
64	VCOF	O	VCO filter output.
65	TESTX	I	TEST pin. Normally "H" or "L" .(Connected to +5 V)
66	$\overline{\text{HS}}$	O	Double speed mode output. "H" : normal speed. "L" : double speed
67	GNDD	—	Digital GND.
68	SPDA	O	Processor status signal output.
69	COFS	O	Correction circuit frame clock (7.35 kHz) output.
70	WDCK	O	Word clock (88.2 kHz) output. SUBQ, BUF0V or 1PF can be selected by the µprocessor command. (Not used)
71	CHCK	O	Channel clock (44.1 kHz) output. "L"for L-channel. "H" for R-channel.
72	BCK	O	Bit clock (1.4112 MHz) output.
73	AOUT	O	Audio data output. (Not used)
74	EMPH	O	Emphasis ON/OFF select signal. "H" : emphasis ON. "L" for emphasis OFF
75	DOUT	O	DIGITAL SIGNAL output.
76	$\overline{\text{TEST2}}$	I	TEST pin. Normally "H".
77	VDDX	—	Crystal oscillator circuit power supply.
78	XI	I	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
79	XO	O	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
80	GNDX	—	Crystal oscillator GND.

IC, TA8191F

Pin No.	Pin Name	I/O	Description
1	TPO	O	Sub beam I-V amplifier (TA Amp) output terminal.
2	TPI	I	Sub beam I-V amplifier (TA Amp) input terminal.
3	TNI	I	Sub beam I-V amplifier (TA Amp) input terminal.
4	FNI	I	Main beam I-V amplifier (FN Amp) input terminal.
5	FPI	I	Main beam I-V amplifier (FP Amp) input terminal.
6	LDO	O	Laser diode amplifier (LD Amp) output terminal.
7	MDI	I	Monitor photo diode amplifier (MD Amp) input terminal.
8	RFN	I	RF amplifier reversed phase input terminal.
9	RFO	O	RF amplifier output terminal.
10	RFI	I	RF ripple signal generator circuit input terminal.
11	VREF	O	Reference voltage output terminal (+2.1 V).
12	RFRP	O	RF ripple signal output terminal.
13	SBAD	O	Scar detection signal output terminal.
14	FEB	I	Focus error balance adjustment input terminal.
15	FEO	O	Focus error amplifier (FE Amp) output terminal.
16	SEL	I	Analog switch control signal input terminal.
17	VEE	—	Power supply terminal. (TA8190F; -5 V, TA8191F; GND)
18	FSN	I	Focus output amplifier (FS Amp) reversed phase input terminal.
19	FSO	O	Focus output amplifier (FS Amp) output terminal.
20	COSC	O	External capacitor to generate focus search signal is connected to this terminal.
21	OSCI	I	External input to control the built-in power supply to generate focus search signal is connected to this terminal.
22	GND	—	GND.
23	VCC	I	Power supply terminal (+5 V).
24	DMEP	I	Disc motor amplifier (DM Amp) positive phase input terminal.
25	DMEN	I	Disc motor amplifier (DM Amp) reversed phase input terminal.
26	DMEO	O	Disc motor amplifier (DM Amp) output terminal.
27	DMPO	O	Disc motor drive amplifier (DMP Amp) output terminal. (Not used).
28	PVR	I	Drive amplifier reference voltage input terminal.
29	FMPO	O	Feed motor drive amplifier (FMP Amp) output terminal. (Not used).
30	FMEO	O	Feed motor amplifier (FM Amp) output terminal.
31	FMEN	I	Feed motor amplifier (FM Amp) reversed phase input terminal.
32	FMEP	O	Feed motor amplifier (FM Amp) positive phase input terminal.
33	FAPO	O	Focus actuator drive amplifier (FAP Amp) output terminal. (Not used).
34	2VRO	I	2 V REF amplifier (2 V REF Amp) output terminal.
35	2VRP	I	2 V REF amplifier (2 V REF Amp) positive phase input terminal.
36	2VRN	I	2 V REF amplifier (2 V REF Amp) reversed phase input terminal.
37	TS2O	O	Tracking servo amplifier 2 (TS2 Amp) output terminal.
38	TS2N	I	Tracking servo amplifier 2 (TS2 Amp) reversed phase input terminal.
39	TS2P	I	Tracking servo amplifier 2 (TS2 Amp) positive phase input terminal.
40	TS1O	O	Tracking servo amplifier 1 (TS1 Amp) output terminal.
41	TS1N	I	Tracking servo amplifier 1 (TS1 Amp) reversed phase input terminal.
42	TS1P	I	Tracking servo amplifier 1 (TS1 Amp) positive phase input terminal.
43	TSO	O	Tracking output amplifier (TS Amp) output terminal.
44	TSN	I	Tracking output amplifier (TS Amp) reversed phase input terminal.

TEST MODE

1. How to Activate CD Test Mode
Insert the AC plug while pressing the function CD button.
All FL display tubes will light up, and the test mode will be activated.

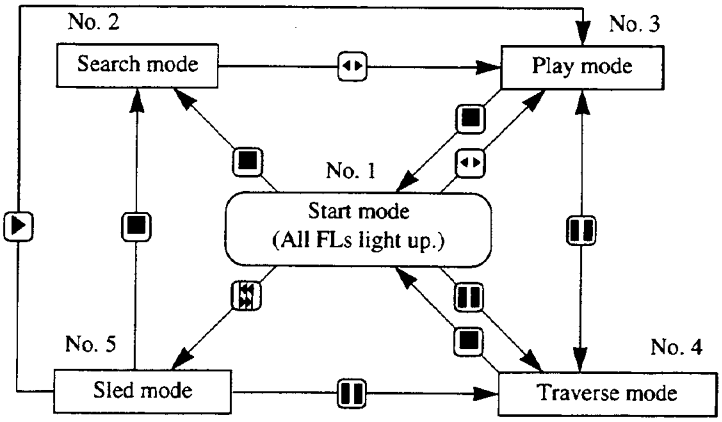
2. How to Cancel CD Test Mode
Either one of the following operations will cancel the CD test mode.
- Press the function button. (except CD function button)
- Press the power switch button.
- Disconnect the AC plug

3. CD Test Mode Functions
When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. (CD block power is ON.) • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

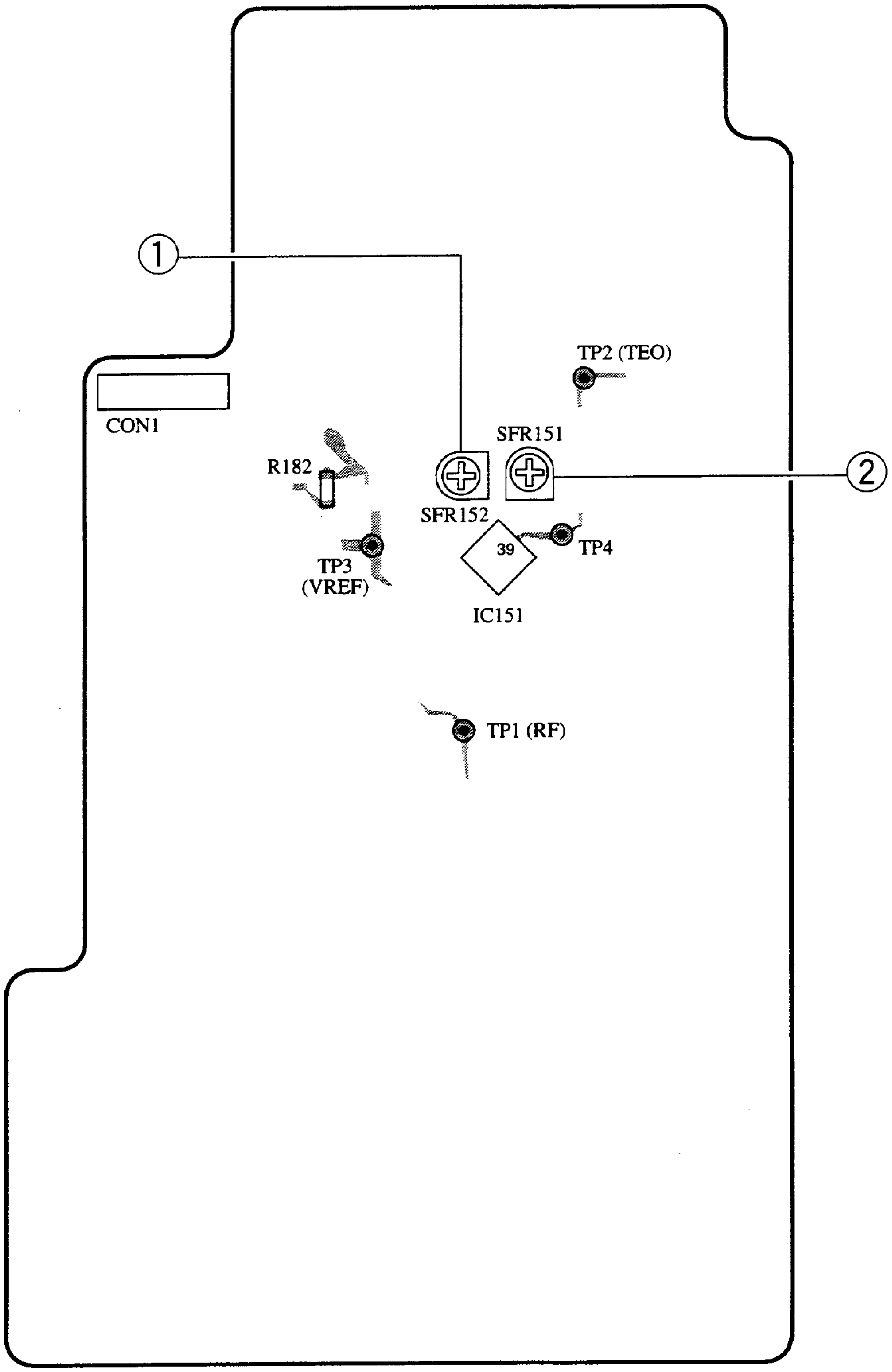
* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.
* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

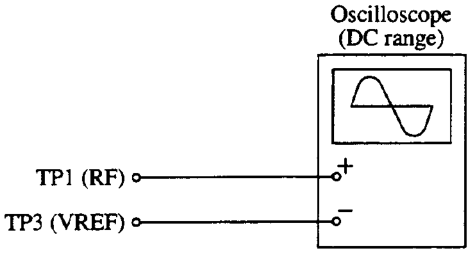
A 3CD C.B (PATTERN SIDE)


①
TP2 (TEO)
CON1
SFR151
R182
②
SFR152
39
TP4
TP3
(VREF)
IC151
TP1 (RF)

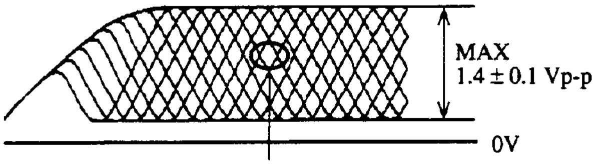
Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.



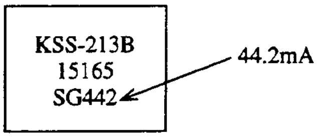
1) Connect an oscilloscope to test points TP1 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Adjust SFR152 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.



EYE PATTERN
must be CLEAR and MAX.

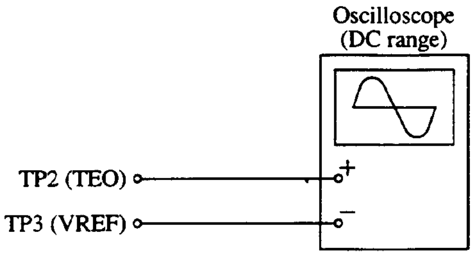
VOLT/DIV: 0.5V
TIME/DIV: 0.5μS

Note : The current of the laser signal can be checked with the voltages on both sides of R182 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

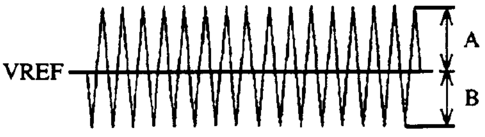


$$\text{Laser current Iop} = \frac{\text{Voltage across R182}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Short circuit between TP3 (VREF) and TP4.
2) Connect an oscilloscope to test points TP2 (TEO) and TP3 (VREF).
3) Turn on the power switch.
4) Insert test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.
5) Adjust SFR151 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the test point TP3 (VREF) and TP4.



A=B

VOLT/DIV: 20mV
TIME/DIV: 2mS

4ZG-1Z

ELECTRICAL MAIN PARTS LIST

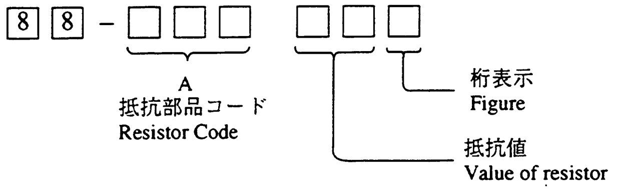
DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-165-010		C-IC,LA9230M
	87-A20-164-010		C-IC,LC78630E-T
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
TRANSISTOR			
	87-026-463-089		TR, 2SA933S (RS)
	89-406-555-089		TR,2SD655E
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-470-089		TR,HN1C03 F B
	87-026-608-089		C-TR,DTC 123 JK
	89-327-125-089		C-TR,2SC2712GR<D>
DIODE			
	87-020-465-089		DIODE,1SS133
3CD C.B			
C11	87-016-081-089		C-CAP,S 0.1-16 RK
C12	87-012-157-089		C-CAP,S 330P-50 CH
C13	87-016-369-089		C-CAP,S 0.033-25 B K
C14	87-016-081-089		C-CAP,S 0.1-16 RK
C15	87-010-596-089		C-CAP,S 0.047-16 RK
C16	87-010-956-089		C-CAP,S 0.068-25 B
C17	87-010-182-089		C-CAP,S 2200P-50 B
C18	87-016-369-089		C-CAP,S 0.033-25 B K
C19	87-010-213-089		C-CAP,S 0.015-25 B
C20	87-010-178-089		C-CAP,S 1000P-50 B
C21	87-012-393-089		C-CAP,S 0.22-16,R,K
C22	87-016-083-089		C-CAP,S 0.15-16 RK
C23	87-010-197-089		C-CAP,S 0.01-25 B
C24	87-010-186-089		C-CAP,S 4700P-50 B
C25	87-015-694-089		CAP E 0.47-50-7L
C26	87-010-322-089		C-CAP,S 100P-50 CH
C27	87-015-686-089		CAP,E 22-25 7L
C28	87-015-697-089		CAP,E 3.3-50 7L
C29	87-010-184-089		C-CAP,S 3300P-50 B
C30	87-010-146-089		C-CAP,S 2P-50 CH
C31	87-010-186-089		C-CAP,S 4700P-50 B
C32	87-010-148-089		C-CAP,S 4P-50 CH
C33	87-016-081-089		C-CAP,S 0.1-16 RK
C35	87-010-196-089		C-CAP,S 0.1-25 F
C37	87-010-405-089		CAP,E 10-50 SME
C38	87-010-263-089		CAP,E 100-10 SME
C39	87-010-197-089		C-CAP,S 0.01-25 B
C40	87-010-401-089		CAP,E 1-50 SME
C41	87-016-463-089		C-CAP,S 0.33-16 B
C42	87-010-263-089		CAP,E 100-10 SME
C43	87-018-134-089		CAP,TC-U 0.01-16 Y
C44	87-010-263-089		CAP,E 100-10 SME
C46	87-010-196-089		C-CAP,S 0.1-25 F
C47	87-015-684-010		CAP,E 47-16 7L
C48	87-010-196-089		C-CAP,S 0.1-25 F
C50	87-010-197-089		C-CAP,S 0.01-25 B
C51	87-010-263-089		CAP,E 100-10 SME
C101	87-016-081-089		C-CAP,S 0.1-16 RK
C102	87-016-081-089		C-CAP,S 0.1-16 RK
C103	87-012-149-089		C-CAP, S 30P-50 CH
C105	87-010-196-089		C-CAP,S 0.1-25 F
C106	87-010-196-089		C-CAP,S 0.1-25 F
C108	87-010-154-089		C-CAP,S 10P-50 CH
C109	87-010-154-089		C-CAP,S 10P-50 CH
C111	87-010-196-089		C-CAP,S 0.1-25 F
C112	87-010-404-089		CAP,E 4.7-50 SME
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-263-089		CAP,E 100-10 SME
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-010-318-089		C-CAP,S 47P-50 CH
C208	87-010-318-089		C-CAP,S 47P-50 CH
C209	87-010-318-089		C-CAP,S 47P-50 CH
C210	87-010-318-089		C-CAP,S 47P-50 CH
C211	87-010-403-089		CAP,E 3.3-50 SME
C212	87-010-403-089		CAP,E 3.3-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C215	87-010-555-049		CAP,E 100-10 GAS
C216	87-010-384-089		CAP,E 100-25 SME
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-089		CAP,E 470-10 11L
C502	87-010-197-089		C-CAP,S 0.01-25 B
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-322-089		C-CAP,S 100P-50 CH
C704	87-010-322-089		C-CAP,S 100P-50 CH
C705	87-018-131-089		CAP,TC-U 1000P-50 B
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
FC5	84-ZG1-630-019		CABLE FFC 6P-1.25
L11	87-003-102-089		COIL,10UH
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-383-019		MOT,M9I T2
R102	87-022-345-089		C-RES,S 1.2K-1/10W F
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

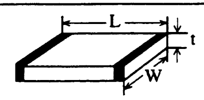
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V
DRIVE C.B			
M1	87-045-358-019		MOT,RF-310TA 43
M2	87-045-356-019		MOT,RF-310TA 30
SW1	87-A90-042-019		SW,LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding


8 8 - □□□ □□□
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

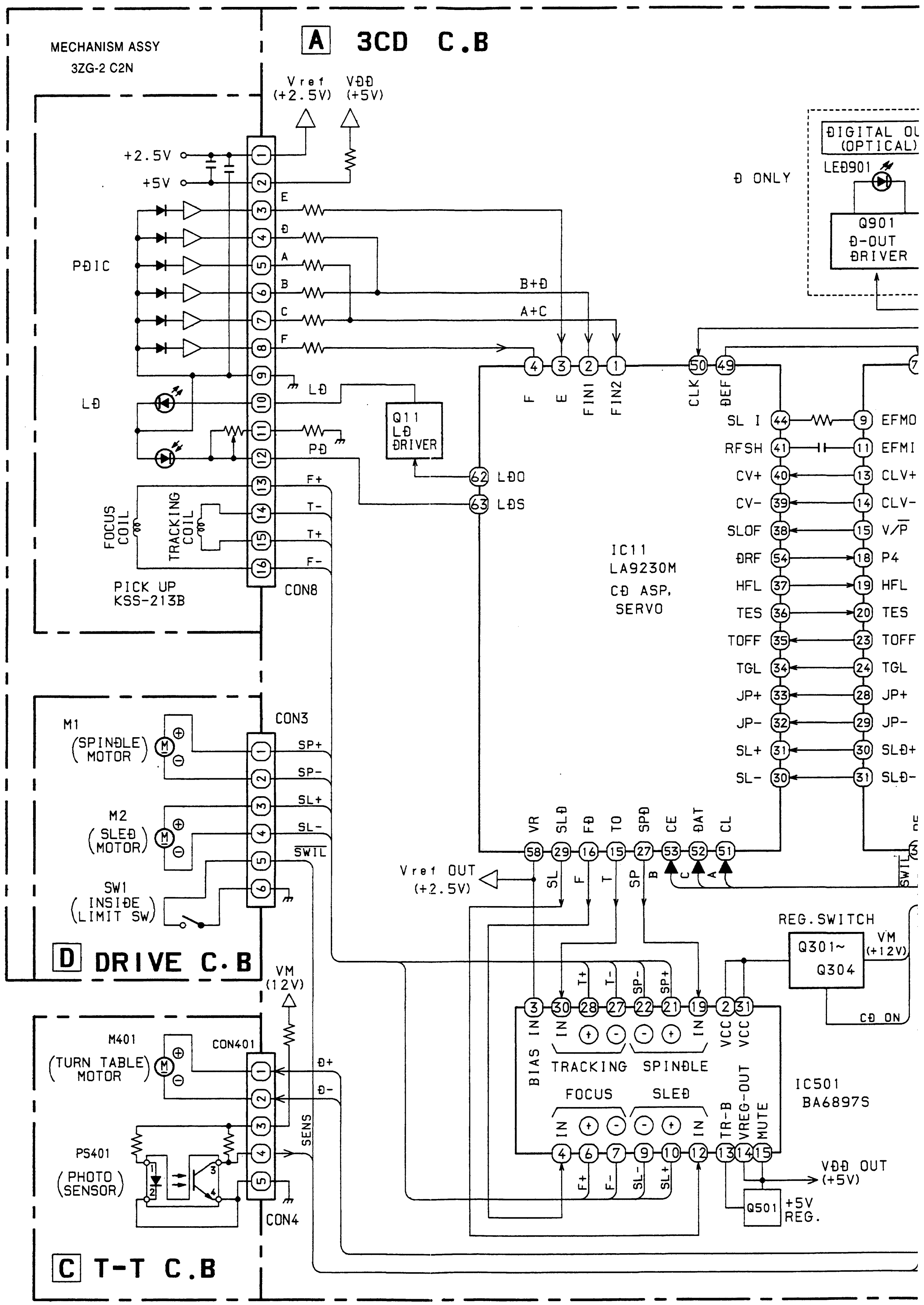
- ■ MECHANICAL EXPLODED VIEW 1 ／ 1

  See page 95

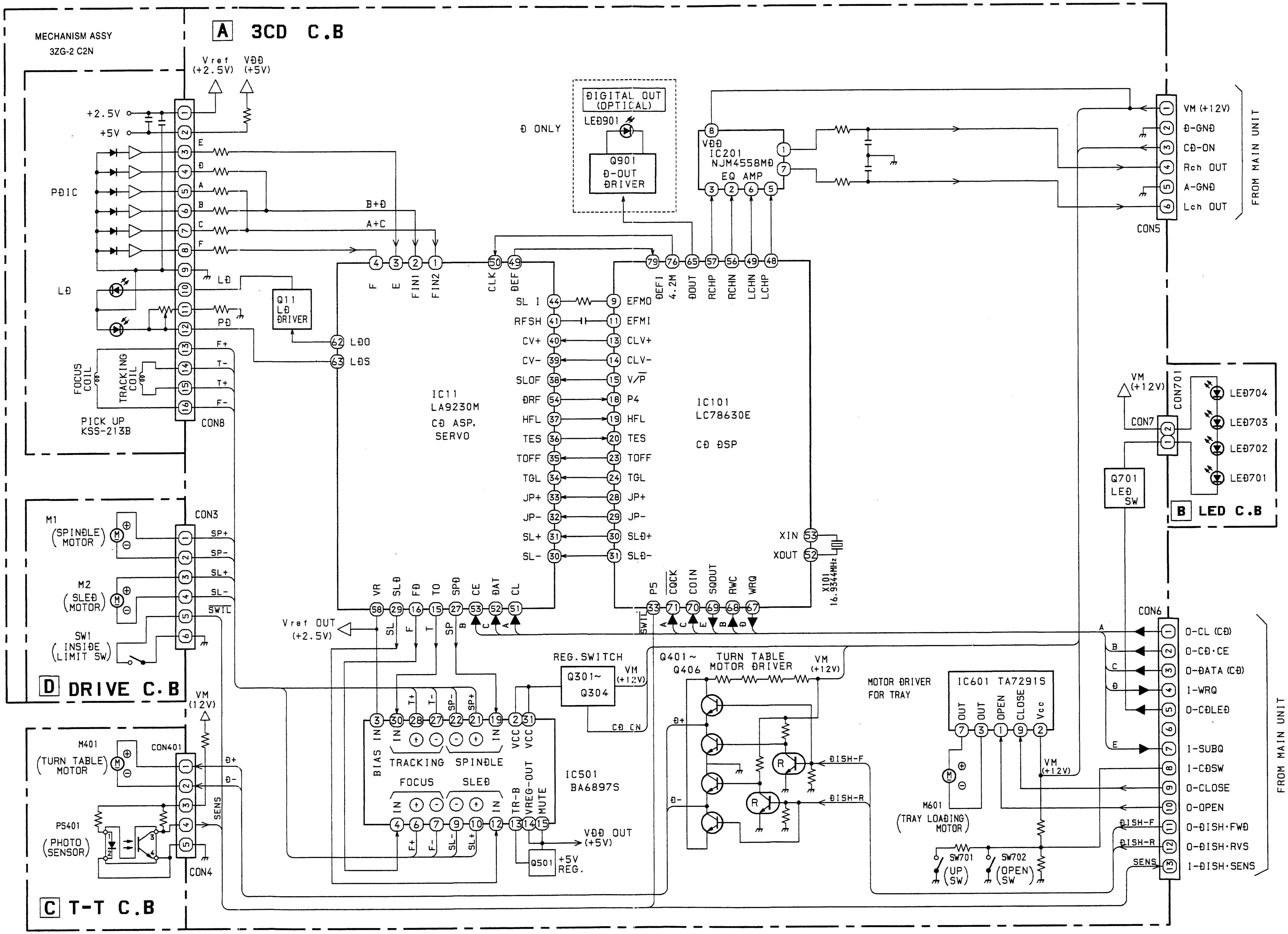
- ■ MECHANICAL PARTS LIST 1 ／ 1

  See page 96

BLOCK DIAGRAM


A 3CD C.B
MECHANISM ASSY
3ZG-2 C2N
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
LD
FOCUS COIL
TRACKING COIL
PICK UP
KSS-213B
CON8
Q11
LD DRIVER
LDO
LDS
B+D
A+C
IC11
LA9230M
CD ASP,
SERVO
DIGITAL OUT (OPTICAL)
LED901
D ONLY
Q901
D-OUT
DRIVER
SLI
RFSH
CV+
CV-
SLOF
DRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
EFMO
EFMI
CLV+
CLV-
V/P
P4
SLD+
SLD-
CLK
DEF
FIN1
FIN2
VR
SLD
FD
TO
SPD
CE
DAT
CL
Vref OUT
(+2.5V)
D DRIVE C.B
M1
SPINDLE MOTOR
M2
SLED MOTOR
SW1
INSIDE LIMIT SW
CON3
SP+
SP-
SL+
SL-
SWIL
VM
(12V)
C T-T C.B
M401
TURN TABLE MOTOR
CON401
PS401
PHOTO SENSOR
SENS
CON4
REG.SWITCH
Q301~
Q304
VM
(+12V)
CD ON
BIAS IN
TRACKING
SPINDLE
FOCUS
SLED
TR-B
VREG-OUT
MUTE
VCC
IC501
BA6897S
VDD OUT
(+5V)
Q501
+5V
REG.

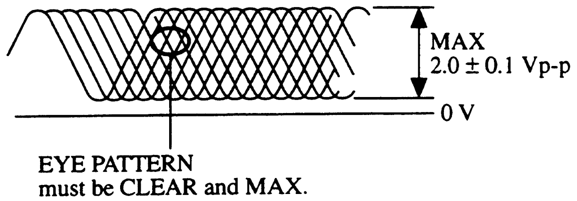
BLOCK DIAGRAM



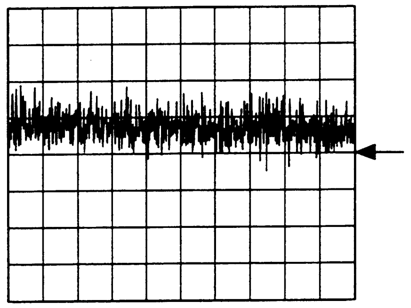
MECHANISM ASSY
3ZG-2 C2N
A 3CD C.B
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
LD
PD
FOCUS COIL
TRACKING COIL
PICK UP KSS-213B
CON8
F+
T-
T+
F-
E
D
A
B
C
F
B+D
A+C
Q11 LD DRIVER
LDO
LDS
D ONLY
DIGITAL OUT (OPTICAL)
LED901
Q901 D-OUT DRIVER
VDD
IC201 NJM4558MD EQ AMP
F
E
FIN1
FIN2
CLK
DEF
SL I
RFSH
CV+
CV-
SLOF
DRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
EFMO
EFMI
CLV+
CLV-
V/P
P4
HFL
TES
TOFF
TGL
JP+
JP-
SLD+
SLD-
DEFI
4.2M
DOUT
RCHP
RCHN
LCHN
LCHP
IC11 LA9230M CD ASP, SERVO
IC101 LC78630E CD DSP
XIN
XOUT
X101 16.9344MHz
VR
SLD
FD
TO
SPD
CE
DAT
CL
P5
CQCK
COIN
SQOUT
RWC
WRQ
SWIL
Vref OUT (+2.5V)
SL
F
T
SP
REG.SWITCH
Q301~Q304
VM (+12V)
CD ON
Q401~Q406 TURN TABLE MOTOR DRIVER
VM (+12V)
D+
D-
DISH-F
DISH-R
MOTOR DRIVER FOR TRAY
IC601 TA7291S
OUT
OUT
OPEN
CLOSE
Vcc
VM (+12V)
M601 (TRAY LOADING MOTOR)
SW701 (UP SW)
SW702 (OPEN SW)
BIAS IN
IN
TRACKING
SPINDLE
FOCUS
SLED
VCC
VCC
TR-B
VREG-OUT
MUTE
IC501 BA6897S
T+
T-
SP-
SP+
F+
F-
SL-
SL+
VDD OUT (+5V)
Q501 +5V REG.
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
SP+
SP-
SL+
SL-
SWIL
D DRIVE C.B
VM (12V)
M401 (TURN TABLE MOTOR)
CON401
PS401 (PHOTO SENSOR)
SENS
CON4
C T-T C.B
CON5
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
FROM MAIN UNIT
VM (+12V)
CON701
CON7
LED704
LED703
LED702
LED701
Q701 LED SW
B LED C.B
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
DISH-F
DISH-R
SENS
FROM MAIN UNIT

WAVE FORM

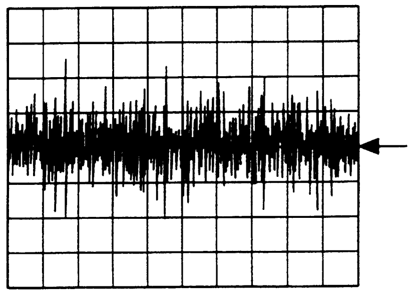
① IC11 Pin ㊶ (RFSM)
VOLT/DIV: 0.5V
TIME/DIV: 1µS



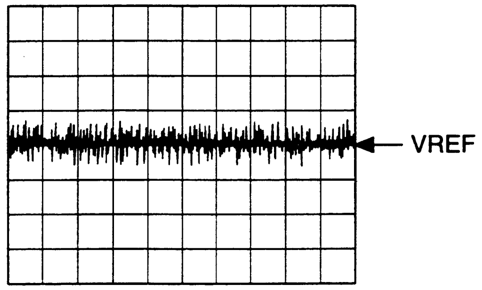
② IC11 Pin ⑯ (FD)
VOLT/DIV: 100mV
TIME/DIV: 1mS



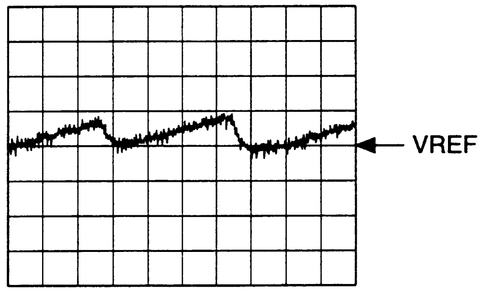
③ IC11 Pin ⑮ (TO)
VOLT/DIV: 100mV
TIME/DIV: 1mS



④ IC11 Pin ㉗ (SPD)
VOLT/DIV: 100mV
TIME/DIV: 1mS

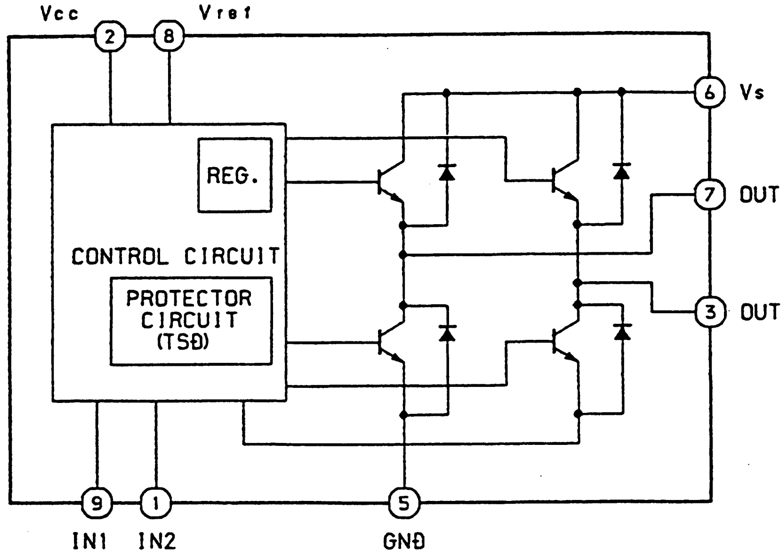


⑤ IC11 Pin ㉙ (SLD)
VOLT/DIV: 200mV
TIME/DIV: 2S



IC BLOCK DIAGRAM

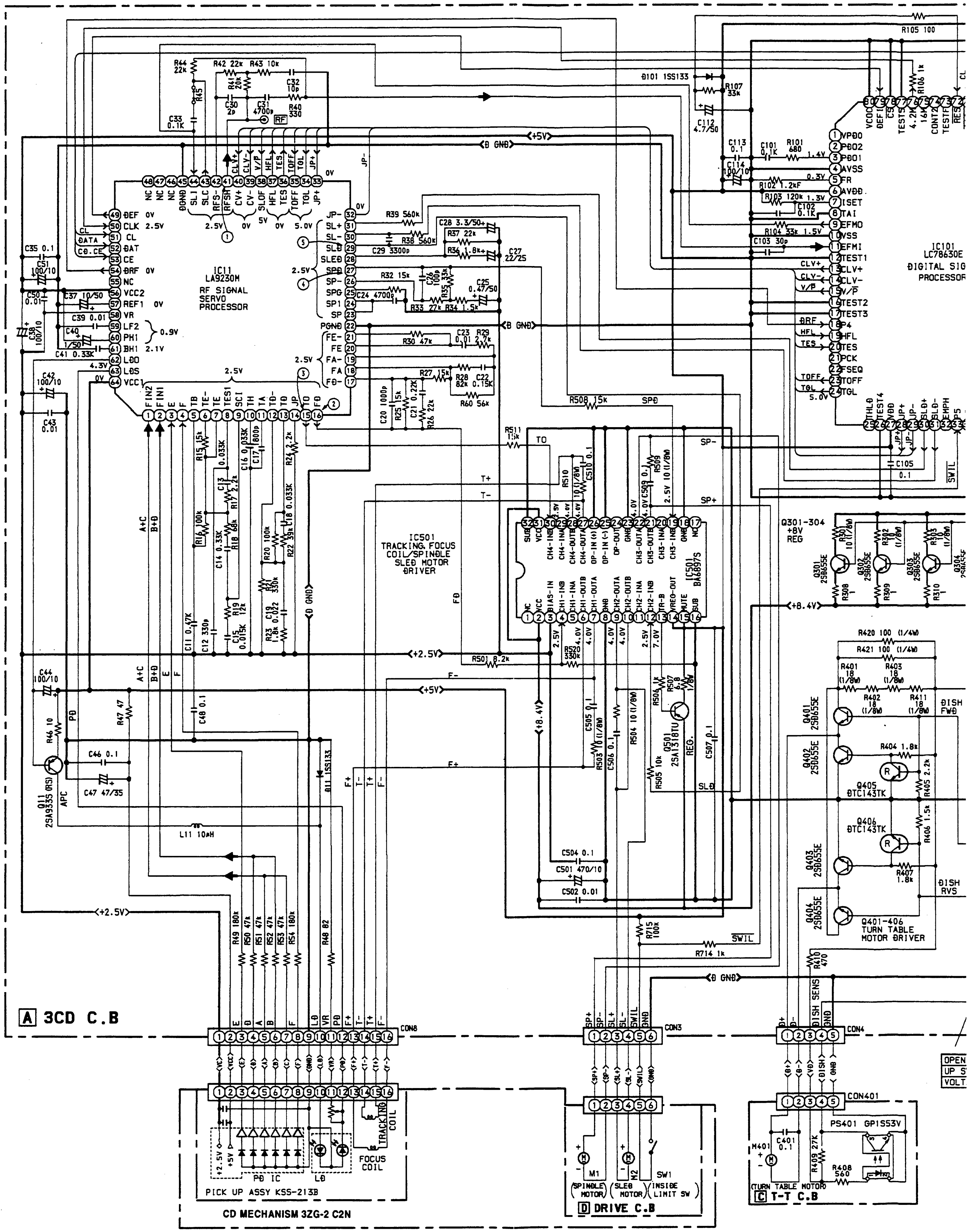
IC, TA7291


Vcc
Vref
②
⑧
⑥ Vs
⑦ OUT1
③ OUT2
REG.
CONTROL CIRCUIT
PROTECTOR CIRCUIT (TSD)
⑨
①
⑤
IN1
IN2
GND

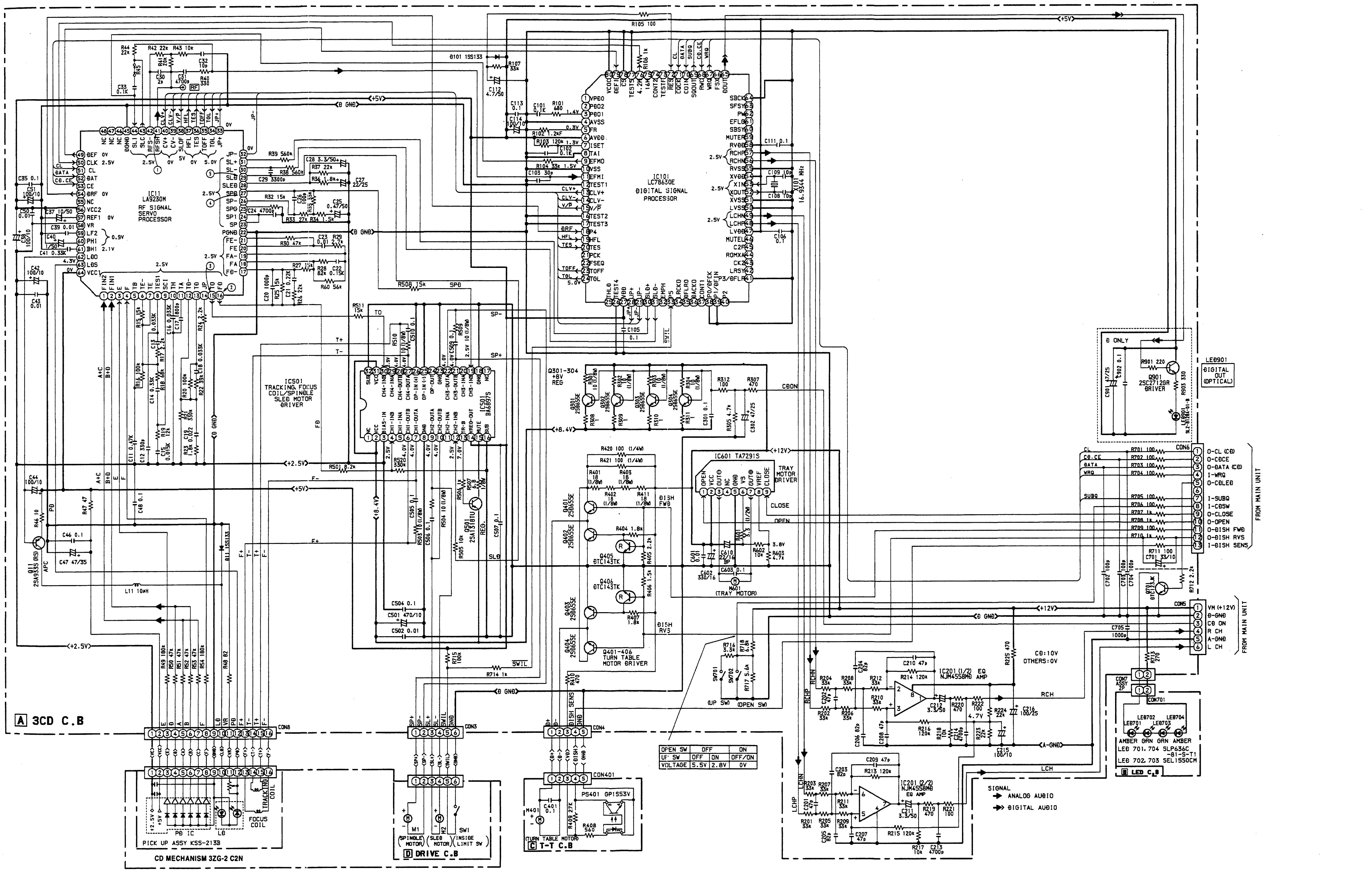
INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

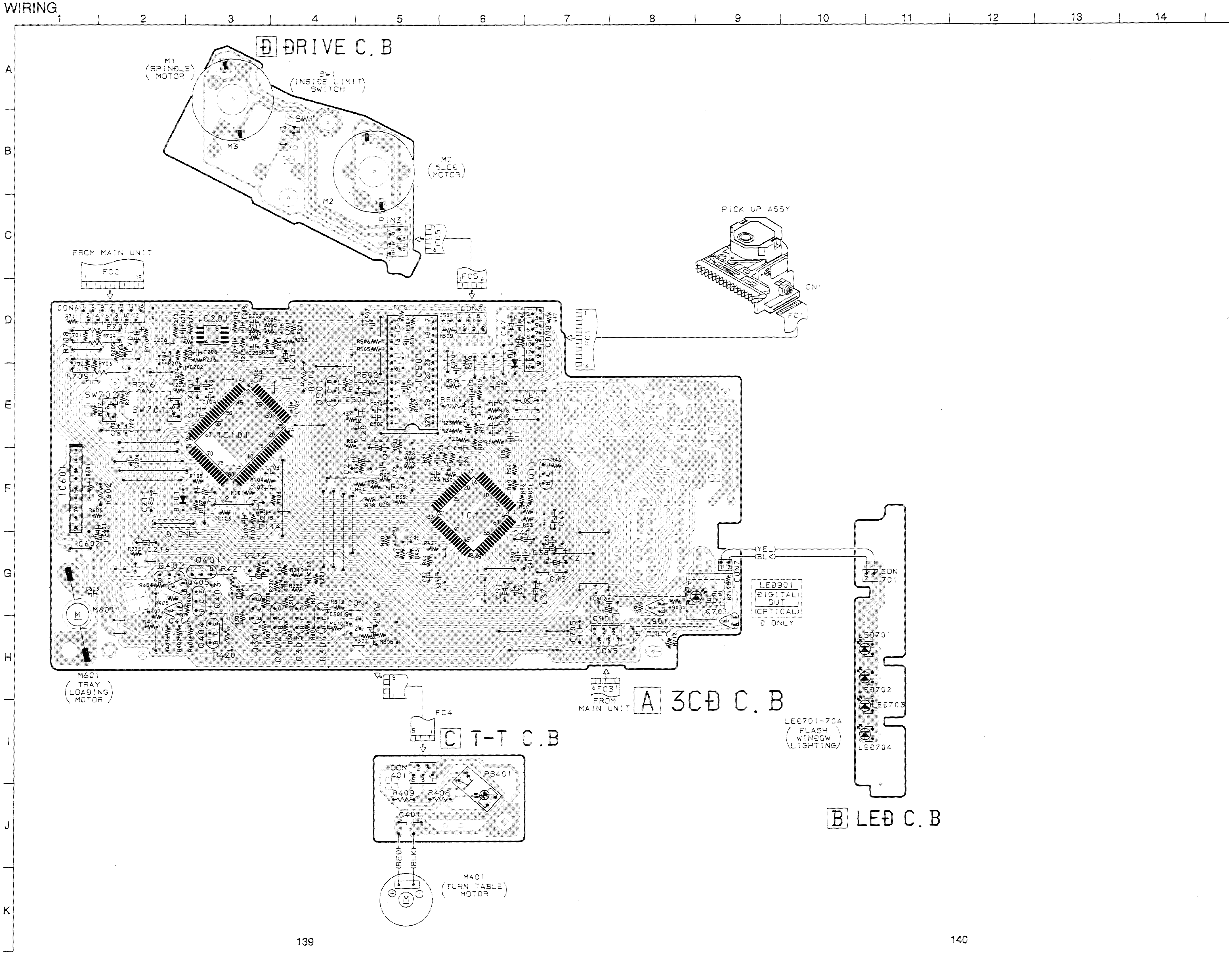
SCHEMATIC DIAGRAM


IC11
LA9230M
RF SIGNAL
SERVO
PROCESSOR
IC101
LC78630E
DIGITAL SIG
PROCESSOR
IC501
TRACKING, FOCUS
COIL/SPINDLE
SLED MOTOR
DRIVER
IC501
BA6897S
Q301-304
+8V
REG
Q401-406
TURN TABLE
MOTOR DRIVER
A 3CD C.B
CON8
CON3
CON4
CON401
PICK UP ASSY KSS-213B
CD MECHANISM 3ZG-2 C2N
TRACK COIL
FOCUS COIL
PD
IC
LD
M1
M2
SW1
SPINDLE MOTOR
SLED MOTOR
INSIDE LIMIT SW
D DRIVE C.B
PS401 GP1S53V
M401
TURN TABLE MOTOR
C T-T C.B
Q11
2SA933S (RS)
Q501
2SA1318TU
Q401 2SD655E
Q402 2SD655E
Q403 2SD655E
Q404 2SD655E
Q405 DTC143TK
Q406 DTC143TK
D101 1SS133
D11 1SS133
L11 10µH
DISH FWD
DISH RVS
SWIL
+5V
+2.5V
+8.4V
B GND
OPEN
UP S
VOLT

SCHEMATIC DIAGRAM


IC11 LA9230M RF SIGNAL SERVO PROCESSOR
IC101 LC78630E DIGITAL SIGNAL PROCESSOR
IC501 TRACKING, FOCUS COIL/SPINDLE SLED MOTOR DRIVER
IC501 BA6897S
Q301-304 +8V REG
IC601 TA7291S TRAY MOTOR DRIVER
Q401-406 TURN TABLE MOTOR DRIVER
M601 (TRAY MOTOR)
Q901 2SC2712GR DRIVER
LED901 DIGITAL OUT (OPTICAL)
D ONLY
IC201 (1/2) NJM4558MD EQ AMP
IC201 (2/2) NJM4558MD EQ AMP
CD:10V OTHERS:0V
CON6
O-CL (CD)
O-CDCE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
FROM MAIN UNIT
CON5
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM MAIN UNIT
A 3CD C.B
CON8
CON3
CON4
CON401
OPEN SW | OFF | ON
UP SW | OFF | ON | OFF/ON
VOLTAGE | 5.5V | 2.8V | 0V
(UP SW) (OPEN SW)
PS401 GP1S53V
M401
(TURN TABLE MOTOR)
C T-T C.B
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D DRIVE C.B
PD IC
LD
FOCUS COIL
TRACKING COIL
PICK UP ASSY KSS-213B
CD MECHANISM 3ZG-2 C2N
CON7 ASSY 2P
CON701
LED701 LED702 LED703 LED704
AMBER GRN GRN AMBER
LED 701, 704 SLP636C -81-S-T1
LED 702, 703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
X101 16.9344 MHz

WIRING



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A
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C
D
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F
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H
I
J
K
Đ ĐRIVE C.B
M1 (SPINĐLE MOTOR)
SW1 (INSIĐE LIMIT SWITCH)
SW1
M3
M2 (SLEĐ MOTOR)
M2
PIN3
FC5
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
IC201
CON3
CON8
IC101
IC501
IC601
IC11
Q501
SW702
SW701
Đ ONLY
Q401
Q402
Q403
Q404
Q405
Q406
Q301
Q302
Q303
Q304
CON4
C705
C901
Q901
Q701
CON5
CON7
(YEL)
(BLK)
CON 701
LEĐ901 ĐIGITAL OUT (OPTICAL) Đ ONLY
Đ ONLY
M601
M601 (TRAY LOAĐING MOTOR)
FC4
FC3 FROM MAIN UNIT
A 3CĐ C.B
LEĐ701
LEĐ702
LEĐ703
LEĐ704
LEĐ701-704 (FLASH WINĐOW LIGHTING)
C T-T C.B
CON 401
PS401
R409
R408
C401
(REĐ)
(BLK)
M401 (TURN TABLE MOTOR)
B LEĐ C.B

IC DESCRIPTION

IC, LC78630E

Pin No.	Pin Name	I/O	Description
1	VPDO	O	Vari-pitch PLL charge pump output pin. This pin must be open when not used.
2	PDO2	O	Bit clock playback PLL charge pump output pin during 2 times and 4 times speed. This pin must be open when not used.
3	PDO1	O	Bit clock playback PLL charge pump output pin during normal speed.
4	AVSS	—	Analog system GND. Normally 0V.
5	FR	I	An external resistor to set built-in VCO frequency range is connected to this pin.
6	AVDD	—	Analog system GND.
7	ISET	I	An external resistor set PD01 and PD02 output current is connected to this pin.
8	TAI	I	Test input pin with built-in pull-down resistor.
9	EFMO	O	EFM signal output pin.
10	VSS	—	Digital system GND. Normally 0V.
11	EFMI	I	EFM signal input pin.
12	TEST1	I	Test input pin with built-in pull-down resistor.
13	CLV+	O	Spindle servo control output pin. Acceleration when CLV+ is "H".
14	CLV-	O	Deceleration when CLV- is "H".
15	V/$\overline{\text{P}}$	O	Rough servo/phase control automatic selection monitoring output pin. Rough servo at "H". Phase control mode at "L".
16, 17	TEST2, TEST3	I	Test input pin with built-in pull-down resistor.
18	P4	I/O	Input/output port.
19	HFL	I	Tracking detection signal input pin. Schmitt input.
20	TES	I	Tracking error signal input pin. Schmitt input.
21	PCK	O	EFM data playback bit clock monitoring pin. 4.3218 MHz when phase is locked during normal speed playback.
22	FSEQ	O	Sync signal detection output pin. When the sync signal detected from the EFM signal agrees with the internally generated sync signal, "H" output.
23	TOFF	O	Tracking OFF output pin.
24	TGL	O	Tracking gain selector output pin. Gain is increased at "L".
25	THLD	O	Tracking hold output pin.
26	TEST4	I	Test input pin with built-in pull-down resistor.
27	VDD	—	Digital system GND.
28, 29	JP+, JP-	O	Tracking jump output pin. JP+ "H" occurs at acceleration during jump toward outside or decelerator toward inside. JP- "H" occurs at acceleration during jump toward inside or deceleration toward outside.
30, 31	SLD+, SLD-	O	Sled output pin. Four different level can be set using commands.
32	EMPH	O	Emphasis monitoring output. "H" indicates that emphasis disc is being played back.
33	P5	I/O	Input/output.
34	LRCKO	O	Digital filter output. LR clock output pin.
35	DFLRO	O	Digital filter output. LR data output pin. DF is turned OFF with the DFOFF command.
36	DACKO	O	Digital filter output. Bit clock output pin.
37	CONT1	O	Output port.
38	P0/DFCK	I/O	Input/output port. The DF bit clock input pin during the anti-shock mode.
39	P1/DFIN	I/O	Input/output port. The DF data input pin during the anti-shock mode.
40	P2	I/O	Input/output port. Deemphasis filter ON/OFF selection input pin during the anti-shock mode. Deemphasis filter ON at "H".
41	P3/DFLR	I/O	Input/output port. The DF LR clock input pin during the anti-shock mode.
42	LRSY	O	For ROMXA • LR clock output pin.
43	CK2	O	For ROMXA • Bit clock output pin. Polarity inversion by the CK2CON command.
44	ROMXA	O	For ROMXA • Interpolation data output pin. The un-interpolated data is output with the ROMXA command.
45	C2F	O	For ROMXA • C2 flat output pin.
46	MUTEL	O	For 1-bit DAC • L-channel mute output pin.
47	LVDD	—	For 1-bit DAC • L-channel power supply.
48	LCHP	O	For 1-bit DAC • L-channel P output pin.
49	LCHN	O	For 1-bit DAC • L-channel N output pin.
50	LVSS	—	For 1-bit DAC • L-channel GND. Normally 0 V.
51	XVSS	—	Crystal oscillator GND. Normally 0 V.
52	XOUT	O	An external 16.9344 MHz crystal oscillator is connected to this pin.
53	XIN	I	33.8688 MHz crystal oscillator is connected during 4 time speed playback.
54	XVDD	—	Crystal oscillator GND.
55	RVSS	—	For 1-bit DAC • R-channel GND. Normally 0 V.
56	RCHN	O	For 1-bit DAC • R-channel N output pin.
57	RCHP	O	For 1-bit DAC • R-channel P output pin.
58	RVDD	—	For 1-bit DAC • R-channel power supply.
59	MUTER	O	For 1-bit DAC • R-channel mute output pin.
60	SBSY	O	Subcode block sync signal output pin.
61	EFLG	O	C1 and C2 error correction monitoring pin.
62	PW	O	ubcode P, Q, R, S, T, U, V and W output pin.
63	SFSY	O	Subcode frame sync signal output pin. The level falls down when the subcode is in standby.
64	SBCK	I	Subcode read clock input pin. Schmitt input. This pin must be connected GND when not used.
65	DOUT	O	Digital output pin.
66	FSX	O	7.35 kHz sync signal divided from the crystal oscillator is output to this pin.
67	WRQ	O	Subcode Q output standby output pin.
68	RWC	I	Read/write control input pin.
69	SQOUT	O	Subcode Q output pin.
70	COIN	I	Microprocessor command input pin.
71	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read clock input from SQOUT. Schmitt input.
72	$\overline{\text{RES}}$	I	Chip reset input pin. This pin goes to "L" once when the main power is turned on.
73	TESTF	O	Test output pin.
74	CONT2	O	Output port.

Pin No.	Pin Name	I/O	Description
75	16M	O	16.9344 MHz crystal output pin. 33.8688 MHz is output during 4 times speed playback.
76	4.2M	O	4.2336 MHz output pin.
77	TEST5	I	Test input pin with built-in pull-down resistor.
78	$\overline{CS}$	I	Chip select input pin with built-in pull-down resistor.
79	DEFI	I	Defect detection signal input pin. This pin must be connected GND when not used.
80	VCOC	I	Vari-pitch VCO control input pin. This pin must be connected GND when not used.

IC, LA9230M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Photo diode of pickup is connected to this pin. This signal is added to the FIN1 pin signal to produce the RF signal and subtracted to produce the FE signal.
2	FIN1	I	Photo diode of pickup is connected to this pin.
3	E	I	Photo diode of pickup is connected to this pin. This signal is subtracted from the F pin signal to produce the FE signal.
4	F	I	Photo diode of pickup is connected to this pin.
5	TB	I	DC component of the TE signal is input to this pin.
6	TE-	I	The TE signal gain adjustment resistor is connected between this pin and the TE pin.
7	TE	O	The TE signal output pin.
8	TESI	I	TES (Track Error Sense) comparator input pin. The TE signal is input after passing through band-pass filter.
9	SCI	I	Shock sense input signal is connected to this pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD-	I	An external tracking phase compensation constant is connected between the TD and VR pins.
13	TD	I	An external tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD-	I	A focusing phase compensation constant is connected between the FD and FA pins.
18	FA	I	A focusing phase compensation constant is connected between the FD- and FA- pins.
19	FA-	I	A focusing phase compensation constant is connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE-	I	An external FE signal gain setting resistor is connected between the TE and this pins.
22	AGND	—	Analog signal GND.
23	SP	O	Single-ended output of the CV+ and CV- pin input signal.
24	SPI	I	Spindle amplifier input.
25	SPG	I	An external spindle gain in 12 cm mode setting resistor is connected to this pin.
26	SP-	I	An external spindle phase compensation constant together with the SPD pin, is connected to this pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Sled phase compensation constant is connected to this pin.
29	SLD	O	Sled control signal output pin.
30, 31	SL-, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP-, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input pin from DSP. Gain low when TGL = "H".
35	TOFF	I	Tracking off control signal input pin from DSP. Tracking off when TGL = "H".
36	TES	O	The TES signal is output from this pin to DSP.
37	HFL	I	The (HIGH FREQUENCY LEVEL) is used to judge whether the main beam is positioned above the bits or mirror.

Pin No.	Pin Name	I/O	Description
38	SLOF	I	Sled servo off control input pin.
39, 40	CV-, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS-	I	RF gain setting and 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	The (SLICE LEVEL CONTROL) is the signal which control the data slice level of the RF waveform with DSP. The (SLICE LEVEL CONTROL) is from this pin.
44	SLI	I	The input signal which controls the data slice level with DSP, is connected to this pin.
45	DGND	—	Digital system GND.
46	NC [FSC]	—	No connection. (Output pin for focus search smoothing capacity.)
47, 48	NC	—	No connection.
49	DEF	O	Disc defect detection output pin.
50	CLK	I	Reference clock input pin. The DSP 4.23 MHz is input to this pin.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	(DETECT RF) RF level detection output.
55	NC	—	No connection.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	I	A bypass capacitor for reference voltage is connected to this pin.
58	VR	O	Reference voltage output pin.
59	LF2	I	An external disc defect detection constant is connected to this pin.
60	PH1	I	An external RF signal peak holding capacitor is connected to this pin.
61	BH1	I	An external RF signal bottom holding capacitor is connected to this pin.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

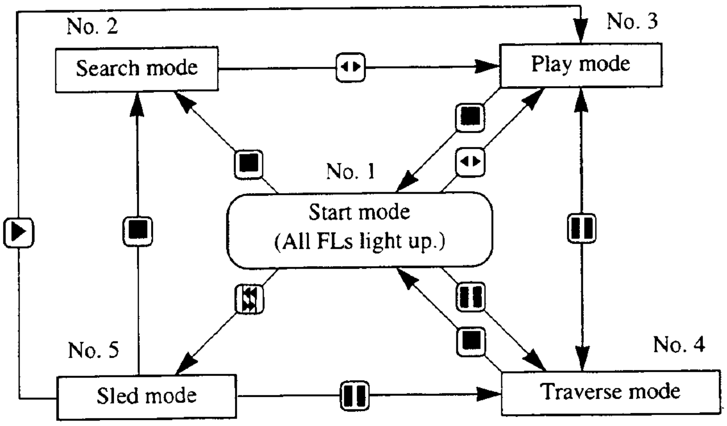
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD11	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	❚❚ key	CD11	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

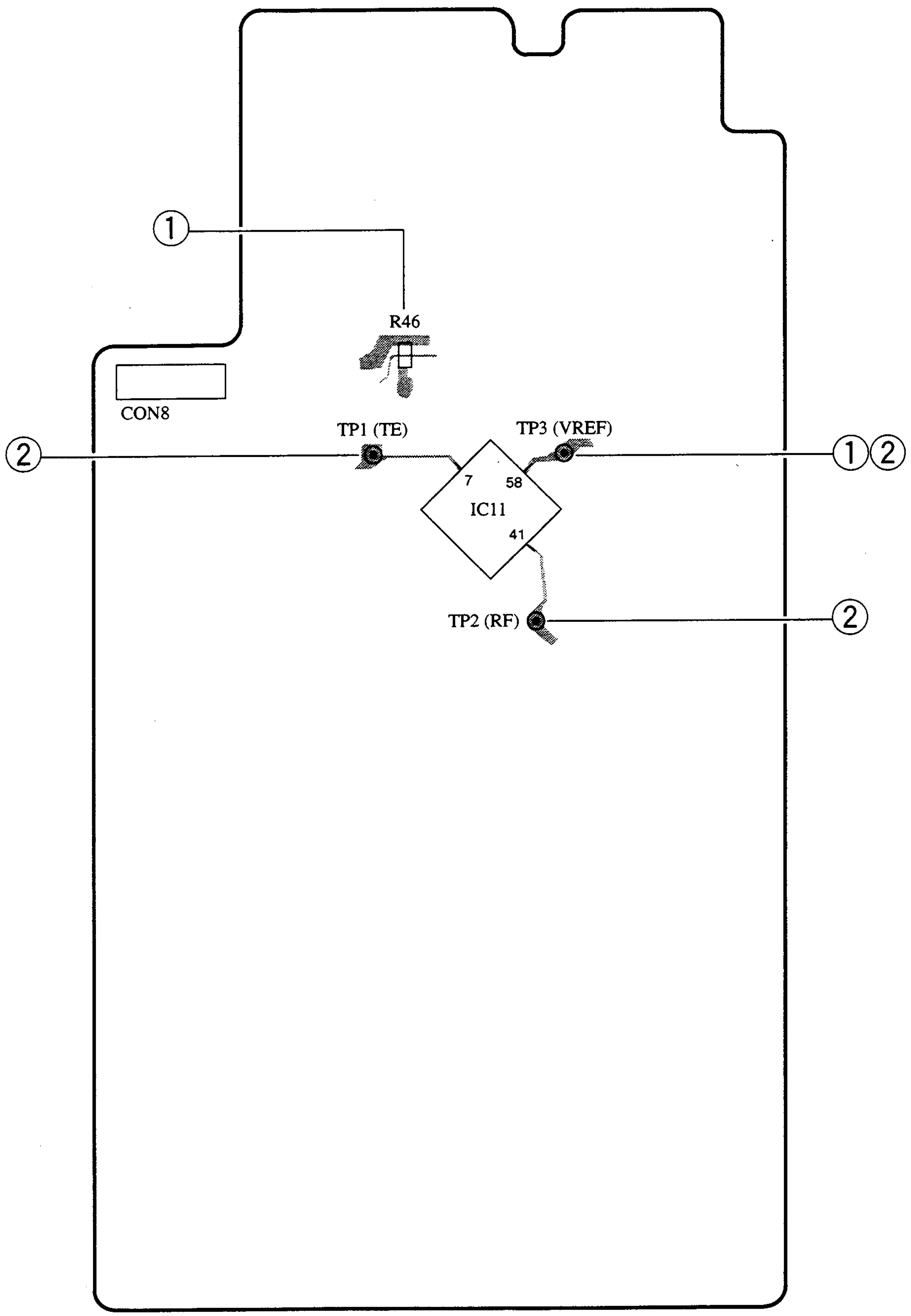
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



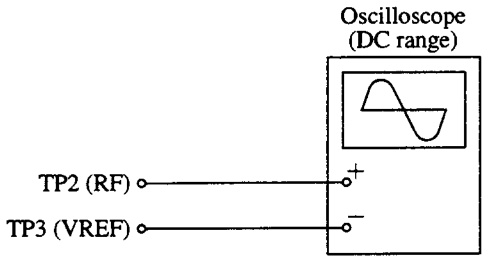
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

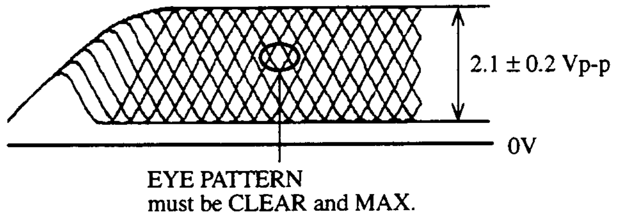

①
R46
CON8
②
TP1 (TE)
TP3 (VREF)
①②
7
58
IC11
41
TP2 (RF)
②

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. RF waveform Check

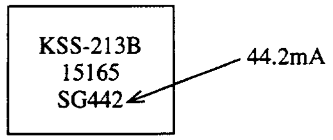

Oscilloscope
(DC range)
TP2 (RF)
TP3 (VREF)
+
−

1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Confirm that the waveform at oscilloscope has amplitude of 2.1 Vp-p, and clear wedge area in its center.


2.1 ± 0.2 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

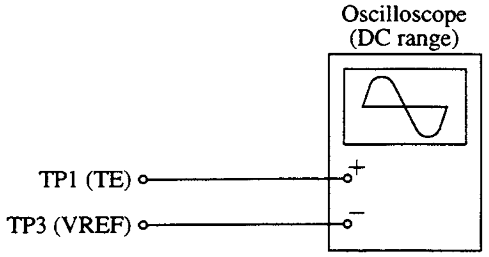
VOLT/DIV: 50mV
TIME/DIV: 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω).
The difference for the specified value shown on the label must be within ± 6.0mA.

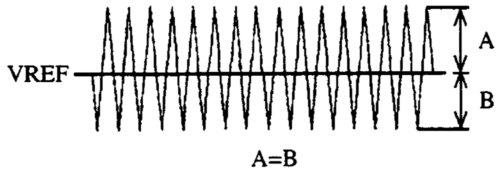

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check

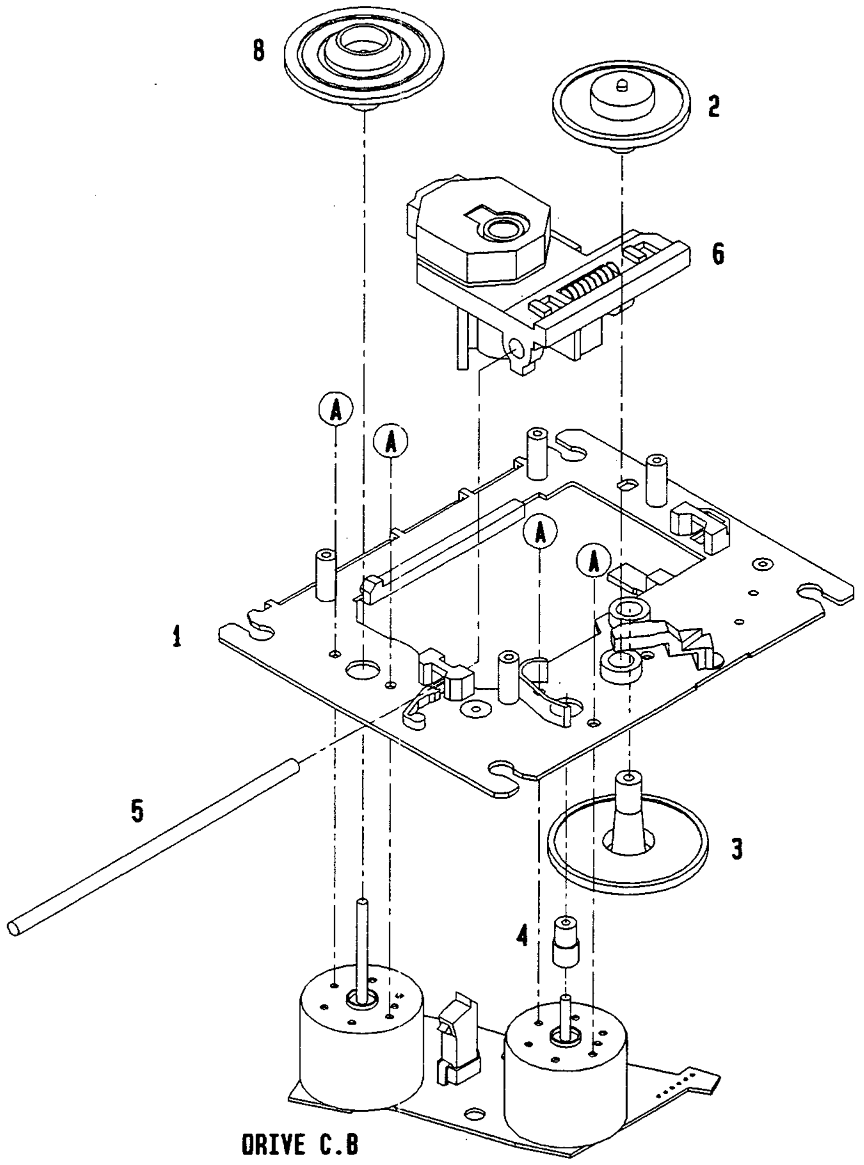

Oscilloscope
(DC range)
TP1 (TE)
TP3 (VREF)
+
−

1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782(YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



VOLT/DIV: 20mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C2N <Z>)



CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C2N <Z>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION	REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S	6	87-070-445-010		PICK-UP,KSS-213B
2	83-ZG2-204-419		GEAR,A	8	83-ZG2-233-019		TURN TABLE,A5
3	83-ZG2-205-219		GEAR,B	A	87-261-032-219		SCREW V+2-3
4	83-ZG2-220-01K		GEAR MOTOR 2				
5	83-ZG2-207-119		SHAFT,SLIDE				

USE MODEL LIST

CX-NAV70 (NSX-AV70)
CX-NAV700 (NSX-AV700)
CX-NAV71 (NSX-AV71)
CX-NAV80 (NSX-AV80)
CX-NAV800 (NSX-AV800)
CX-NAV90 (NSX-AV90)
CX-NAV900 (NSX-AV900)
CX-NK300 (NSX-K300)
CX-NK700 (NSX-K700)
CX-NK77 (NSX-K77)
CX-NK80 (NSX-K80)
CX-NK90 (NSX-K90)
CX-NV300 (NSX-V300)
CX-NV3000 (NSX-V3000)
CX-NV3001 (NSX-V3001)
CX-NV390 (NSX-V390)
CX-NV500 (NSX-V500)
CX-NV700 (NSX-V700)
CX-NV705 (NSX-V705)
CX-NV710 (NSX-V710)
CX-NV715 (NSX-V715)
CX-NV720 (NSX-V720)
CX-NV770 (NSX-V770)
CX-NV800 (NSX-V800)
CX-NV8000 (NSX-V8000)
CX-NV8080 (NSX-V8080)
CX-NV820 (NSX-V820)
CX-NV900 (NSX-V900)
CX-NV9000 (NSX-V9000)
CX-NV9090 (NSX-V9090)
CX-NV915 (NSX-V915)
CX-NV929 (NSX-V929)
FD-NAKH8 (NSX-AKH8)
FD-NH8 (NSX-AVH8)
FD-NH8 (NSX-AVH8)
FD-NH80 (NSX-AVH80)
FD-NH9 (NSX-AVH9)
FD-NH9 (NSX-AVH9)
FD-NH90 (NSX-AVH90)
FD-SNAKH8 (NSX-AKH8)
FD-SNH9 (NSX-AVH9)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART